

# EQUIPMENT PREVIEW

## of CHEMICAL PROCESS INDUSTRIES

Volume 3

Over 25,000 Copies

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Member C. C. A.

Number 3

### The Editors' Spotlight

—interesting items selected by The Editors in preparing this issue.

1. **Removable Rubber Liners** . . . for all shapes and sizes of tanks and barrels. For handling acids, alkalis, salt solutions and corrosive liquids. Liners can be removed and returned to factory for repairs. See item EP 1594, page 24.
2. **Bin Level Indicator** — Fiberglass diaphragm handles materials at high temperatures. Indicates and controls, automatically, high and low levels of bulk materials, semi-liquids or liquids in conveyors, elevators, weighing devices, etc. See item EP 1496, page 13.
3. **Flowmeter, Low-Cost** — Measures rate of flow of gases, and for vacuum work. Simple, improved construction of "Pirex" balanced glass. See item EP 1473, page 9.
4. **Double Interlock Roller Bearing**—Simplified mounting on ordinary shafting . . . 30,000 hours service . . . completely enclosed bearing. See item EP 1622, page 30.
5. **Diaphragm Packless Valve** — "Balancing-action" assures positive valve opening . . . will not "stick shut." For volatile gases and liquids, etc. Hermetic seal provides safety factor. See item EP 1611, page 28.
6. **Chemical-Proof Table Top** — Resistant to acids, bases, salts, solvents, heat and abrasion. Finish will withstand constant immersion for 2 weeks in 96% sulphuric acid . . . virtually fracture and dent proof. See item EP 1461, page 7.
7. **Gunite Liners Reinforcement**—Surface armor spot welded to tower holds gunite and ganister linings. Material easily and quickly applied. See item EP 1448, page 5.
8. **Valve Outside Rim of Tires**—Industrial tires with valve having no contact with rim . . . under-inflation cannot damage valve, as in "creeping." See item EP 1455, page 6.
9. **Mixer-Kneader**—For mixing and treating heavy plastics and other tenacious materials. Design eliminates leakage . . . reduces power requirements . . . speed up to any desired mixing cycle. See item EP 1466, page 8.
10. **"Hydraulic Balance" Rotary Pumps**—Only 2 moving parts . . . equal size pumping gears. Handle any clean liquid free from abrasives. See item EP 1562, page 20.
11. **Liquid Level Control**—Unaffected by temperatures or operating pressures. Principle and structural characteristics permit handling all chemicals with little change other than of metals to handle specific chemicals. See item EP 1478, page 10.

## The Dike Breaks . . .

There are indications that the long deferred purchasing of plant equipment necessary for the rehabilitation of old processes and the installation of new processes is commencing to occur.

New processes, showing major advantages over old ones, have continued to be installed during the past decade but changes not promising appreciable immediate returns have been postponed awaiting "better business conditions." It now appears as if manufacturers had concluded that "better business conditions" were, to a considerable extent, an attitude of mind, that business could be, by intelligent endeavor, made to be better so they are proceeding to replace obsolete equipment and modernize manufacturing processes.

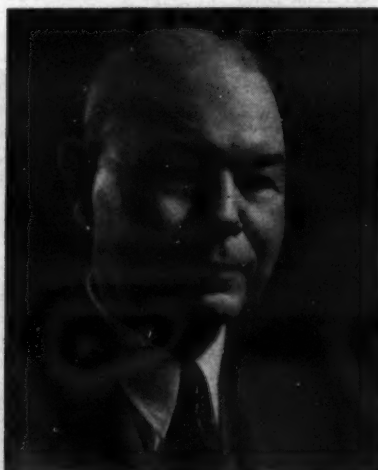
The keenly observing ones find, as they survey the field with intelligence that equipment, materials of construction, processes and method for process control have been revolutionized during this ten year "rest period." It will be found that few processes, as operated a decade ago, are not obsolete today. New methods for continuous automatic or semi-automatic, mass production have arisen. Survey your plants and processes with a critical eye. If nothing can be discovered, which, in your opinion, needs revision or replacement, there is something wrong with you and your organization as well as with

your plant and your processes. It is time to cease to depend on the "family doctor," and a specialist should be consulted.

The specialist may be found among the engineers of the equipment manufacturers, the engineering consultants or the professional research organizations. Conditions will determine who he may be and where he may be found.

Proceed with the idea that business is what we make it and we will soon be on a happier road.

The trickles coming through the dike today will spread tomorrow into lakes upon which we may all contentedly sail our ships.



PROF. H. McCORMACK  
Director, Dept. of Chemical Engineering  
Armour Institute of Technology

*H. McCormack*  
Technical Advisory Editor.

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## Your "Year-Round Chemical Process Equipment Show"

You can't take time to visit an equipment show every few months . . . even if such shows were held frequently in various cities.

But you can keep abreast of developments right at home . . . you can have the "Show" come to you.

EQUIPMENT PREVIEW does just that for you. The Editors search all industry for new developments of importance to chemical process operating men . . . technical experts select those most worthy of your attention.

And, while it is still news, each issue of EQUIPMENT PREVIEW brings these news-facts to you in terse, easy-to-read style . . . all through the year.

Remember . . . this is your specialized equipment paper. It deals only with developments of interest to chemical process men like yourself. So, you need not wade through many publications . . . nor do you need to hunt through hundreds of articles that have no bearing on your type of work. Thus you save your time and energy . . . yet you know you are getting the most comprehensive and most complete picture of new developments affecting your industry.

If you are not now receiving EQUIPMENT PREVIEW personally, you can make sure it comes to you regularly by using the "request slip" between pages 16 and 17 of this issue. No cost . . . no obligation.

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When you have read this issue, remember your associates who would like to see it.

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New DEVELOPMENTS

NEW APPLICATIONS • NEW PROCESSES



## Therm-O-Flake COATING

### SUPERIOR HIGH TEMPERATURE INSULATION

Keeps heat inside, with a coating of plastic insulation. One inch thickness equivalent to about nine inches of fire brick wall in insulation value.

More economical in cost and installation, on existing furnaces, than walls of insulation brick.

Easily applied and largely reclaimable for re-use, after removal.

Most widely used material for high temperature insulation, up to 2000°F.

Write for Information and Prices

Other Therm-O-Flake Products

Made from Exfoliated Vermiculite

Granules, Brick, Block, Concrete



CHICAGO, ILL.

When inquiring specify EP1433... see information request blank, pgs. 16-17

## NOW! A MECHANICALLY-PRECISE VALVE OF CHEMICAL PORCELAIN...

Dense, thoroughly vitrified Chemical Porcelain is ground, lapped and polished to make a smooth-acting leak-proof, corrosion-free valve. Sizes 1" to 4" now available. Write for descriptive literature.



VALVES • PIPE • RASCHIG RINGS

**LAPP** (CHEMICAL PORCELAIN DIVISION)  
INSULATOR CO., INC.

910 GILBERT STREET LE ROY, NEW YORK

When inquiring specify EP1434... see information request blank, pgs. 16-17

## DIRECTORY ... .. of products in this issue

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## TYPE SB ROTARY KNIFE CUTTER



ROTARY  
KNIFE CUTTER

### For Cutting, Shredding, Fiberizing, Granulating, Cracking.

Cork, corn, copra, coffee, peas, fibres, fabric, tobacco, pulp, plastics, lint, seeds are a few material examples.

If you would like to know just what this machine can do for you in product produced and in operating costs, send us a working sample of your materials.

Without obligation on your part, we will run the sample through the Test Machine which we keep ready to run for just this purpose and will provide you with complete data on the results.

The machine is unique in the field of Rotary cutting equipment in a number of design and operating features.

Bulletin F 1234—Part 2 provides details; illustrates the complete line.

**SPROUT, WALDRON & COMPANY, Inc.**  
1300 SHERMAN STREET, MUNCY, PA.

When inquiring specify EP1435... see information request blank, pgs. 16-17



## NEW! DOENUT WHEELS with OUTSIDE VALVE

They're new, different and better — Doenut Wheels in 3 sizes with outside

valve. No matter how carelessly tire is allowed to run under-inflated, valve cannot be cut or damaged by "creeping." It is completely outside the rim, yet free from rubbing or scraping damage. Punctures repaired without removing tire from rim. Available in three sizes — 10" x 2.75"; 12" x 3.30"; 16" x 4.40". Doenut Wheels pay for themselves many times over in reduction of effort, preservation of concrete and hard wood floors. This is another development by the same Musselman who developed the original air-wheel for airplanes. Write for literature and details today.

**MUSSELMAN PRODUCTS CO.**  
6324 ST. CLAIR AVE. CLEVELAND, OHIO

When inquiring specify EP1436... see information request blank, pgs. 16-17



## NEW SOLUTIONS OF PLANT PROBLEMS

From the practical experiences of chemical and process manufacturers . . . . . applying available products in new ways

### Dustless Hopper Weighs Two Micron Particles

60 Cu. Ft. Unit Provides Accuracy of 1/2 of 1%

**Problem**—Manufacturer handling large quantities of pulverized cork needed dustproof weighing hopper to insure accuracy on quantities as small as two microns, to prevent loss of material, and to protect employees from dust hazards.

**Solution**—Specially built hopper, of 60 cu. ft. working capacity, was constructed of Stretcher level plate steel (with sight glasses on both sides for inspection). Hopper has a guaranteed accuracy of 1/2 of 1% and is equipped with an automatic illuminated scale of four beam construction.

**Description**—Magnetic cutoff gate at top of hopper shuts off particles in transit while loading. Hopper is mounted on trolley track with motorized travel and dust-proof bull dog trolley collector system. Selector type discharge is provided for exact positioning of discharge opening. Brushes are located on each side of track wheels to remove abrasive particles. Sides of hopper are sloped to facilitate discharge without rapping sides. Equipment is dustproof as air vent, sliding sleeve, butterfly valve and toggle connections make metal-to-metal contact between discharge vessel and hopper itself when butterfly valves are opened. Metal-to-metal contact permits air pressure in closed vessel to pass through air vents to top of hopper rather than forcing it out sides of vessel when hopper is discharged.

**Results**—Loss of material has been practically eliminated, as has the dust hazard to workers' health—and material loss reduced because of more accurate weighing.

**Other Uses**—Equipment of this type is built for automatic weighing of all types of powdered material including ceramics, calciums, clays, soapstones, pulverized cork; from powdered state to the two micron stage. Further details are available from

READ MACHINERY CO., Dept. EP, York, Pa.

When inquiring specify EP1437 . . . see information request blank, pgs. 16-17

### Photoelectric Relays Protect Press Dies

Stop Press Before Mishap Causes Damage

**Problem**—This manufacturer experienced trouble with his six-operation-sequence press because of parts sticking on the ram . . . then the feeding mechanism would automatically place another piece under same ram and when ram came down on the two pieces the expensive die was damaged.

**Solution**—Six photoelectric relays were installed. Contacts of the six relays were connected in series so that



establishing of a light beam between any of the light sources and its corresponding phototube acted to de-energize the solenoid and trip the clutch of the press. For further protection, light sources were also series-connected so that failure in light brought machine to rest. Operator can stop machine at will by push-button.

**Performance**—Manufacturer states that on first day of operation the equipment stopped the press when a part stuck on the ram. Previous accidents of this nature had cost approximately double the cost of photoelectric equipment, merely to repair the die . . . thus the equipment paid for itself the first day. This equipment has now been in operation more than seven years . . . effecting an estimated saving, in maintenance, of \$3,000 per year or a total of approximately \$21,000.

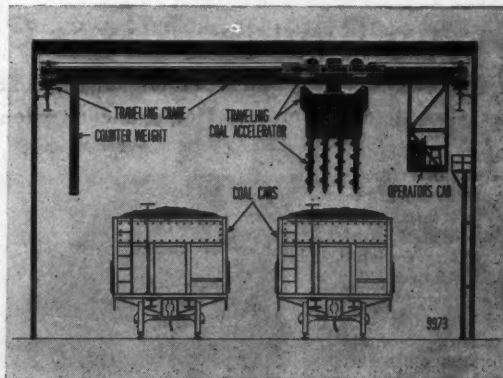
GENERAL ELECTRIC CO., Dept. EP, Schenectady, N. Y.  
When inquiring specify EP1438 . . . see information request blank, pgs. 16-17

### Accelerator Unloads Car of Coal in 1/2 Usual Time

Speeds Unloading Time . . . Reduces Labor Costs

**Problem**—West Virginia power company used coal known as 1/4-inch slack, containing major portion of "bug dust" combined with moisture, forming a very dense mixture which caused considerable difficulty when being fed from bunkers to screw conveyors and from bunker to boiler scale. Four men had to be taken from other important duties and employed for one hour to bring contents of 70-ton dump car of this coal down to track hopper.

**Solution**—The unloading accelerator (shown in cut) was installed. Control of the accelerator is flexible, permit-



ting rapid changes of position, either vertically, horizontally or laterally. Easy starting and stopping, and screw direction can be quickly reversed. By means of traveling crane (see cut) unit can be moved across series of tracks to any one of several cars. Hoist directly above vertical screws raises and lowers digging portion of unit. Accelerator speeds unloading of frozen and high moisture content coal as well as moist slack heavy with "bug dust."

**Results**—Unloading of 70-ton car required just half the time formerly taken. Only two men needed in car for manual labor and a third man to operate accelerator. For additional details of this installation, address

STEPHENS-ADAMSON CO., Dept. EP, 11 Ridgeway, Aurora, Ill.

When inquiring specify EP1439 . . . see information request blank, pgs. 16-17

## VALVES and PUMPS

Designed for CHEMICAL SERVICE



HILLS-McCANNAs  
Sealed  
Patent  
LEAK-PROOF VALVES

The construction of this valve is such that the operating mechanism is completely separated from liquid contact. The body only is exposed to the liquids, separated by a diaphragm, which is the opening and closing medium.

Corrosive solutions, liquids containing suspended matter, semi-solid substances, tacky materials, air, water, etc. can be handled without trouble, because the mechanism cannot become corroded, clogged, or stuck. A tight shut-off is always obtained.

Diaphragms are resistant to materials handled. Bodies can be of alloys or lined with lead, rubber or glass, providing an absolutely chemical resistant installation, offering long life and low upkeep.

Consult us on your Valve or Proportioning problems. Catalogs on request.

HILLS-McCANNAs Positive PROPORTIONING PUMPS

Used in continuous processing systems throughout the world. Made to handle corrosive or non-corrosive liquids, molten materials and other solutions. They are of the constant speed variable stroke type, offering the most dependable means for measured feeding, plus rugged construction to give long service.

Once set to a determined amount the specific volume is fed continuously.

Made in eight different types and over 300 sizes for volumes up to 1500 G.P.H. Pressures from 0 to 22,500 P.S.I.

HILLS-McCANNACo.

2370 NELSON STREET, CHICAGO

PROPORTIONING PUMPS • CENTRIFUGAL PUMPS • THERMOMETER  
WELLS • VALVES • FORCE-FEED LUBRICATORS • NON-FERROUS ALLOYS

When inquiring specify EP1440 . . . see information request blank, pgs. 16-17

## FOR MIXING . . . SIFTING

---Get These New Booklets

DRAWINGS SHOWING DETAIL  
OF OPERATION

SCREEN CLOTH DATA

FULL LINE OF MIXERS AND  
GYRO-SIFTERS . . . ILLUSTRATED AND DESCRIBED



### Handle Wide Range of Materials— In Many Process Operations

These new booklets give helpful data on new and unusual applications in widely different processes . . . show many new developments in our complete line of Unique and Gardner Mixers and our Gyro-Sifters.

Unique and Gardner Mixers offer standard units for all ordinary mixing . . . and special machines for unusual and difficult jobs. The Gyro-Sifters handle either dry or damp materials . . . combine gyratory and reciprocal motion . . . have unusual flexibility and adaptability to intricate screening problems.

These booklets will help you check your present operations . . . help plan improvements.

Write for "Mixers—32E" or "Gyro-Sifters—41E" . . . or both.

**ROBINSON MFG. CO.**

720 Painter St.

Muncy, Pa.

When inquiring specify EP1441 . . . see information request blank, pgs. 16-17



### HOW TO REDUCE PACKING COSTS

There is a time-tested FRANCE Metal Packing design for steam, air and gas service regardless of speed, pressure or temperature. Used the world over for nearly half a century on piston rods and valve stems in any type of engine, pump or compressor whether the motion is reciprocating or oscillating — provides efficient service for years without maintenance expense.

Raise engine, pump or compressor efficiency and reduce packing costs by installing France Full-Floating Metal Packing—simple in construction and simple to install.

Write for Catalog M-3

**THE FRANCE PACKING CO.**

TACONY, PHILADELPHIA, PA.

Branch Offices in Principal Cities

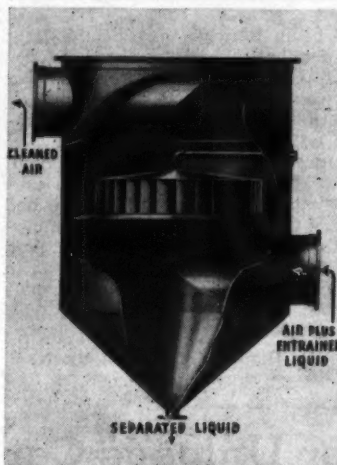


When inquiring specify EP1442 . . . see information request blank, pgs. 16-17

### New Solutions (Con.)

## Oil Spray Job Aided By Entrainment Separator

Recovers Oil—Stops Oil Mist Nuisance



**Problem** — Manufacturer of motor car parts sprayed metal parts with oil to prevent corrosion during storage and in transit. Parts were taken from conveyor, sprayed with usual equipment in spray booth, and air exhausted to prevent oil mist from escaping to surrounding operations. Exhaust collected on adjacent walls and building roofs and softened roofing compositions. Also, much oil was lost.

**Solution** — An entrainment separator

was installed with inlet built into back of booth, the separator outlet connected to fan which exhausted through roof. Booth was so designed that all its surfaces drained to sloping bottom and into separator inlet—thus receiving all excess oil by drainage and oil mist from exhausted air. **Results**—All possible nuisance of oil mist was eliminated and considerable oil was recovered for re-use.

**Other Uses**—Separator unit is applicable to similar types of nuisance elimination and recovery of materials such as moisture, solvents, pickling and washing processes, and in other spraying operations.

**CLAUDE B. SCHNEIBLE CO., Dept. EP, 3961 Lawrence Avenue, Chicago, Ill.**

When inquiring specify EP1443 . . . see information request blank, pgs. 16-17

## Syrup Blender Mixes 3 Wet and Dry Ingredients

Gives Complete Dispersion, Homogeneous Blend

**Problem** — Manufacturer of chocolate products, making chocolate milk drink, needed special mixer that would thoroughly and homogeneously blend wet and dry ingredients — malt syrup, chocolate and milk. Standard equipment would not handle job.

**Solution** — Special blender, 6' long, 3' wide and 3' deep, was constructed of stainless steel clad steel. Motor driven, stainless steel double spiral agitator provides complete dispersion. Unique feature of this machine is the pair of semi-circular racks on which barrels or drums can be placed for drainage into tank and rocked on wheels to remove all of contents. By regulating flow of liquid, a definite rate of mixing can be established to produce uniform results. Blender can be jacketed to heat or cool product during mixing.



## 75<sup>th</sup> ANNIVERSARY

### CORROSION PROBLEMS

For seventy-five years The U. S. Stoneware Co. have been solving problems involving corrosion. Our Engineering Department is available to design your process equipment using any of the available materials of construction.

#### LINED EQUIPMENT . . .

Tygon, Resilon, Rubber.

#### ACID PROOF MASONRY . . .

Acid proof brick set in silicate, sulphur or synthetic resin cement.

#### ALLOY EQUIPMENT . . .

All types of process equipment in the various alloys.

#### CHEMICAL STONEWARE . . .

Standard and special equipment.

Your specific problem will receive our careful analysis.

**THE UNITED STATES STONEWARE CO.**  
AKRON OHIO

When inquiring specify EP1444 . . . see information request blank, pgs. 16-17

**Results**—Complete dispersion of ingredients and blending to produce a completely homogeneous syrup resulted in improved product quality plus production economies.

**Other Uses**—This type of blender suggests extensive use in mixing liquids with other liquids or with dry or semi-wet solids to produce syrups, emulsions, creams, pastes, etc. Specific information obtainable from

**L. O. KOVEN & BRO., Dept. EP, Jersey City, N. J.**

When inquiring specify EP1445 . . . see information request blank, pgs. 16-17

## Have You A "New Solution"?

If you have recently solved a problem in chemical process manufacturing, through a new application or new use of your regular products, The Editors invite you to submit the facts for publication in this department . . . in over 25,000 copies.

In submitting your "solution" please be sure to give the pertinent facts of (a) the problem, (b) just what was done and (c) what the results were.

Send to The Editors, EQUIPMENT PREVIEW  
737 N. Michigan Ave. Chicago

### Workshop Precision Lathes

Forty-eight pages are needed in this handsome catalog to completely cover three major models of precision lathes. Scores of photographs illustrate its pages showing in detail the many features of the different variations of the three models. Complete specifications are given for all models and accessories. Catalog No. 50 is available.

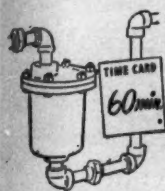
**SOUTH BEND LATHE WORKS, Dept. EP, 593 Niles Ave., South Bend, Ind.**

When inquiring specify EP1446 . . . see information request blank, pgs. 16-17



## TIME CARDS

Show the Savings  
on  
SIMPLIFIED PIPING



TIME CARD  
Piping out  
Steam Trap  
30 min.

• Savings realized on simplified piping with Anderson Super-Silvertops are clearly shown by the installation time cards. You actually save from 30 to 60 minutes of installation time on every steam trap installed in addition to the cost of the fittings. That's how simplified piping saves on steam trap costs.

But that is only one of the advantages of Anderson Super-Silvertop steam traps. Their increased capacity usually permits a smaller, less expensive trap in the first place. Also, clean-cut, simplified piping makes a neater, better looking piping job (compare the difference in the illustrations). Furthermore, users say that Anderson Super-Silvertops stay on the line—they eliminate constant repairs and maintenance. That is because the valve and seat are built to last (replaced free of charge if valve leaks within one year), and the bucket doesn't scrape or batter itself against the side walls of the body. Besides, large drilled passages do not clog with dirt and scale, hence these engineered steam traps do not need frequent cleaning.

Find out more about this steam trap that stays on the line—the trap that saves installation time—write for complete details and prices.

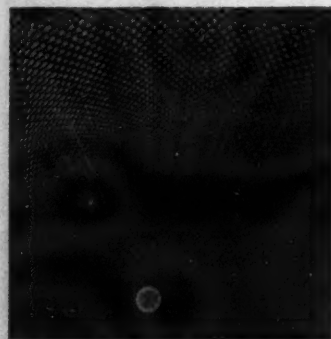
THE V. D. ANDERSON CO. • 1954 W. 96th St., Cleveland, Ohio

## Super-Silvertop STEAM TRAPS

When inquiring specify EP1447... see information request blank, pgs. 16-17

## Steel Surface Armor Holds Ganister Lining

Offers Smooth "Holding" Surface of Right Depth



**Problem**—To reinforce inside of 6 foot I. D. fractionating tower for large refinery preparatory to application of ganister lining.

**Solution**—In particular application, "Hexteel" Surface Armor was spot welded to tower. This "armor" is a steel mat formed by clinching continuous strips of die

formed steel so that openings are hexagonal in shape. Material used for liner reinforcing is #14 thick and ¾" deep. See cut.

Methods have been developed so that lining of either ¾" or 1½" depth can be applied. "Hexteel" can be made of a variety of metals for particular applications. Material can be bar, angle, spot or bolt welded to vessel wall.

**Results**—Material is very easily and quickly applied as it is prefabricated at factory. "Holding" surface of right depth is obtained for the protective coating material, and uniform thickness of "Hexteel" makes smooth surface.

**Other Uses**—Can be used for other types of vessels such as soaking chambers and other refinery and processing equipment for reinforcing protective coatings such as gunite and ganister linings. For further details write—

WM. F. KLEMP CO., Dept. EP, 6841 S. Melvina Ave., Chicago, Illinois.

When inquiring specify EP1448... see information request blank, pgs. 16-17

## "Trends In Chemical Process Equipment" . .

. . . will be discussed by Prof. H. McCormack at a luncheon of the Chemical and Allied Products-Buyers' Group at Cincinnati, O. . . June 5th.

This luncheon meeting is a part of the National Association of Purchasing Agents Annual Convention being held in Cincinnati, June 3 to 6.

Prof. McCormack is Technical Advisory Editor of EQUIPMENT PREVIEW . . . and also Director of the Chemical Engineering Dept., Armour Institute of Technology, Chicago.

## Neoprene Oil & Acid Suit

Two-Piece Style—All Seams Vulcanized



**Uses**—Under conditions where oil, acids, alkalis and the solvents that disintegrate natural rubber. Manufacturer states there is little or no effect on the material from hot or cold oils, gasoline, naphtha, hot or cold caustic soda, tannic acid, muriatic acid, hydrochloric acid, and less effect from sulphuric acid than on natural rubber.

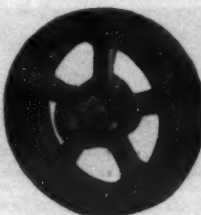
**Description**—Made in two-piece style with all seams vulcanized. Jacket has square shoulders, low stand-up collar, ball and socket snap fasteners with protecting fly front. Pants are bib type with adjustable suspenders of same material. Standard coat length is 29"—pants inseam 30". Chest measurement of coat—46", 50" and 54". Waist measurements of pants—38", 42" and 46". Three sizes—small, medium and large. Price for complete two-piece suit is \$13.50, and jacket or pants only, \$6.75 each. Extra large size made at additional cost.

INDUSTRIAL PRODUCTS CO., Dept. EP, 779 West Somerset Street, Philadelphia, Pa.

When inquiring specify EP1449... see information request blank, pgs. 16-17

## Truck Wheel Hub Caps

Seal Bearings Against Dirt, Stop Grease Loss.



**Uses**—Industrial truck wheels using these hub caps are in operation in milling, meat packing, chemical, etc., industries.

**Features**—Smooth surface of hub caps prevents tearing or ripping of products stored in sacks, cases, cartons, etc., caused by trucks bumping packages in narrow aisles and crowded quarters. Will not smear grease or otherwise damage such packages when accidentally contacted. Grease does not run out to cause untidy floors. Caps fit tightly yet are easily removable when necessary.

**Description**—Hub cap is of pressed steel designed to fit tightly on end of wheel hub. Cap illustrated is used on outside hub of wheel over the end of axle. Cap on opposite end of hub is furnished with hole to fit over axle—and inside the cap is a felt seal firmly held in place.

THOMAS TRUCK & CASTER CO., Dept. EP, 4021 Mississippi River, Keokuk, Iowa.

When inquiring specify EP1450... see information request blank, pgs. 16-17

## IDEAL for Distributing and Reclaiming Bulk Materials

## REDLER CONVEYORS

Redler Conveyor-Elevators . . . for conveying-elevating pulverized, granular, small lump and flaky materials . . . are available in Horizontal Closed Circuit designs which are ideal for distributing and reclaiming bulk materials.



• Horizontal Closed Circuit Redler Conveyor with four bend corners.



• Horizontal Closed Circuit Redler with only two bend corners.

They feed and discharge at any desired point . . . and recirculate any oversupply. Their gentle en masse action minimizes explosion hazards. Redlers are enclosed, dust-tight and compact. Check up today!

Section through contamination-proof Horizontal Closed Circuit Redler.

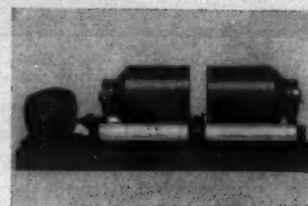
## STEPHENS-ADAMSON MANUFACTURING COMPANY

11 RIDGEWAY • AURORA, ILLINOIS

CONVEYING • ELEVATING • SCREENING • TRANSMISSION EQUIPMENT

When inquiring specify EP1451... see information request blank, pgs. 16-17

## "ROLLER-TYPE" JAR MILLS ARE SAFER TO HANDLE, EASIER TO USE AND SAVE YOU MONEY



"Roller-Type" Jar Mill (3 Jar Size)

Compare the amazingly low price of our "Roller-Type" Jar Mills with the usual type of Jar Mill. See how much more economical they are, size for size, how much easier and safer they are to use, how sturdy and rugged their construction.

NOTE THE JARS REQUIRE NO CUMBERSOME CLAMPING INTO FRAME OR HOUSING—JUST SETTING THE JARS ON THE REVOLVING RUBBER-COVERED ROLLERS—NOTHING MORE.

Standard sizes accommodate one, two, three or four "Loxal" Jars, either of the 1, 1½ or 2 gal. size. Larger sizes to order.

Write for Bulletin #261 which describes and illustrates our complete line of Jar Mills.

THE U. S. STONWARE CO.  
AKRON, OHIO

When inquiring specify EP1452... see information request blank, pgs. 16-17

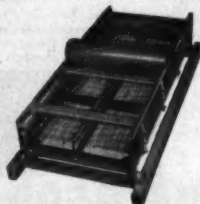
## UNIVERSAL

### Vibrating Riddles and Screens

"UNIVIBE" Light-Weight, Portable Riddles for batch screening, testing, etc. Screen panels changed in a moment. Weighs but—39 lbs. Operates from light socket. Sturdily constructed, reliable and fully guaranteed. Complete Unit with stand — only \$87.50 f.o.b. Racine, Wis.



UNIVERSAL VIBRATING SCREENS for large capacities on the most difficult separations. Complete line of Screening Equipment, open or enclosed,



models. Backed by twenty years of experience in Vibrating Screen manufacture, exclusively. Tried, Proved and Guaranteed.

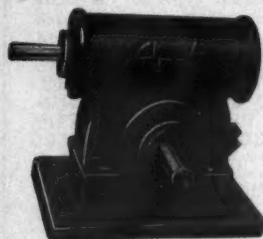
Write for your copy of 32 page Catalog on Screens and Screening.

**UNIVERSAL VIBRATING SCREEN CO.**  
RACINE — WISCONSIN

When inquiring specify EP1453... see information request blank, pgs. 16-17

## HOW MANY PRODUCTION HOURS IN AN *Abart* SPEED REDUCER?

We frankly can't tell about the hours — but we can point with pride to actual records that show Abart Reducers in day-in and day-out, month after month, year after year service — with practically no maintenance expense at all. Figure what that means in terms of power transmission profits and lowered operating costs. These Abart Reducers paid for themselves years ago, and now every minute of additional service adds to profits alone. Write for complete catalog.



1½ and SA Unit  
Horizontal Worm Gear Drive

GEARS — Fine craftsmanship—good materials—no stocks—made to your B/P or specifications. Let us quote.

**Abart** GEAR AND MACHINE CO.  
MANUFACTURERS OF  
Speed Reducers & Gears  
CHICAGO, ILLINOIS

When inquiring specify EP1454... see information request blank, pgs. 16-17

## Outside Valve Tires

### Under-Inflated Tires Cannot Damage Valve

Uses — Doenut tires for industrial use — to save effort and wear and tear on flooring.

Features — Valve is entirely outside the rim and does not contact the rim at any point. Completely eliminates valve damage caused by "creeping" from running tires under-inflated. Punctures are repaired without removing tire from wheel.

Description — Valve stem is of short, flexible rubber construction located so as to be free from rubbing or scraping damage. Built in three sizes: 10" x 2.75"; 12" x 3.30" and 16" x 4.40".

MUSSELMAN PRODUCTS CO., Dept. EP, 6324 St. Clair Ave., Cleveland, Ohio.

When inquiring specify EP1455... see information request blank, pgs. 16-17



## Non-Cracking Joint Seal

Resistant to Propane, Butene, Grease & Oils

Uses—Can be used on rubber (which it does not attack) as well as all kinds of metal fittings. Used in propane service, both liquid and gas.

Features—Material is completely resistant to propane, pentane, butene, benzol, gasoline, naphtha, grease and oils of all types. It is flexible, leak-proof and non-cracking. Will not harden and joints may be easily broken without damage to fittings.

Performance—"Glycoseal" was used to make up a manifold of ½" pipe fittings, including nipples, tees, elbows, and plugs. Manifold was connected directly to a propane cylinder and cylinder up-ended filling manifold with liquid. At the end of one week, only one joint showed slight leakage. Same test was applied to propane gas at 20 lbs. pressure for one week and no leaky connection was noted. Samples of material left exposed to air remain fluid and do not soak through textiles or other porous materials with which they come in contact. Further information and samples can be obtained from

THE GLYCO PRODUCTS CO., INC., Dept. EP, 148 Lafayette St., New York, N. Y.

When inquiring specify EP1456... see information request blank, pgs. 16-17

## Non-Sparking Ladder

Light Weight, Cannot Rust or Rot

Uses — Because of light weight portability, useful for storage of materials and maintenance work in industrial plants. With use of aluminum spikes, which do not throw

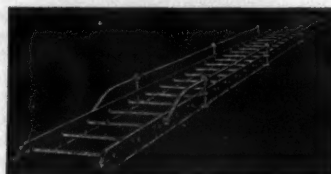
a spark, ladder can be used around oil tanks and other places where inflammable materials are being handled.

Features—Being made entirely of aluminum, it cannot rust, rot, splinter or burn, and has great strength. Light weight and can be easily carried from place to place. Rungs corrugated to prevent slipping.

Description—Ladders are equipped with handrails on both sides, and either steel or aluminum spikes on bottom. Can be supplied in lengths up to 36 feet long and in various widths.

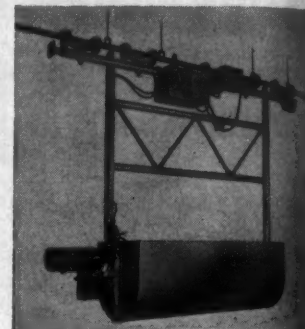
ALUMINUM LADDER CO., Dept. EP, 120 Adams St., Tarentum, Pa.

When inquiring specify EP1457... see information request blank, pgs. 16-17



## Automatic Dumping Unit

Illustrated to the right is one of the four automatic carriers operating on an American MonoRail system in a chemical plant handling super-phosphates. Buckets of 2-ton capacity are loaded from chutes at a central point and are dispatched to preset movable stops, traveling by means of American MonoTractors with pneumatic tire drive wheels. When the loaded carrier stops, the dumping motor is energized through a time relay and the load discharged. Buckets are returned to position and carrier travels back to loading station all through automatic controls.



Loaded carriers operate at speeds of 50 f.p.m. and emptied ones return at 300 f.p.m. Automatic stopping devices can be moved to any part of this system, which handles approximately 80 tons per hour.

American MonoRail engineers have developed many such systems employing the American MonoTractor for propelling carriers, cranes and hoists. Their services are available without obligation. 254 page catalog will be sent on letterhead request.

(Advertisement of)

**The American MonoRail Company**

13109 Athens Avenue  
Cleveland, Ohio

When inquiring specify EP1458... see information request blank, pgs. 16-17

## How BUFLOVAK Can Help You Solve Processing Problems



REACTION KETTLE.

If you have a processing problem involving drying, evaporation, extraction, impregnation, solvent recovery, crystallization, or food processing, the BUFLOVAK Research and Testing Plant can help you by recommending the correct type of equipment. Here a small quantity of your material can be processed on a semi-plant scale. It gives accurate indexes of full production results.

Send for literature on...

DRYERS... EVAPORATORS... PROCESSING KETTLES... CHEMICAL CASTINGS... SOLVENT RECOVERY EQUIPMENT... IMPREGNATORS.

**Buffalo Foundry & Machine Co.**

1547 Fillmore Ave., Buffalo, N. Y.

When inquiring specify EP1459... see information request blank, pgs. 16-17





## CHEMICAL MIXERS BLENDERS



### READCO Double Arm Mixers

For operation under Vacuum or Pressure.  
Single Packing Gland construction to reduce maintenance and eliminate contamination.  
Self-cleaning arms to facilitate discharging.  
Built of common metal or any commercial alloy in sizes from 1 qt. to 500 gal. Working capacity, with or without jacketed bowls.



### READCO Blenders and Mixers

For Batch or Continuous operation.  
With mulling or ribbon, trowel or paddle type, removable agitators.  
Built of common metal or any commercial alloy in sizes from 1 cu. ft. up, with or without jacketed bowls.

WRITE FOR THIS CATALOG

READ MACHINERY CO. INC., YORK, PA.

When inquiring specify EP1460... see information request blank, pgs. 16-17

## Chemical-Proof Tabletop

Resistant to Acids, Bases, Salts, Solvents, Heat and Abrasion

**Uses**—In laboratories and process manufacturing where working surfaces are subject to corrosion from constant contact with chemicals; where it is desirable for base materials of working surfaces to be rigid, durable, and highly resistant to stress, heat and abrasion.

**Features**—Table top—"Kemweld"—is virtually fracture and dent-proof. Has high resistance to heat without warping or cracking. Smooth "Keminize" finish is chemical and abrasion resistant.

**Performance**—The finish will withstand constant immersion for two weeks in 96% sulphuric acid, 37% hydrochloric acid, aqua regia, a mixture of potassium dichromate and concentrated sulphuric acid, any concentration of caustic soda and potash and the most penetrating and powerful solvents used in industrial laboratories. The complete tabletop — finish and "Kemweld" top material — will withstand reflected heat of 150 deg. C. for 24 hours or more without damage. Lighted cigarettes and matches can be left burning on top without destroying finish. Under severe comparative abrasion tests, using motor-driven device inflicting wear of 100 strokes per minute at constant rate of speed over 100 sq. in., the top lost smallest number of grams by weight, establishing an abrasion index of 1.0.

**Description**—Tops are built up to a thickness of 1 1/4" of four layers of tempered welded fibre laminated together under high temperature and pressure using a waterproof, resinous adhesive as a bonding agent. The "Keminize" finish impregnates the surface fibres of the slightly porous "Kemweld" top material, thus bonding finish to base. Four coats are alternately sprayed and baked with sanding between each application, providing perfect bonding and a smooth surface. 8-page booklet is available showing large list of re-agents to which top has been subjected in covered spot or immersion tests.

KEWAUNEE MFG. CO., Dept. EP, Kewaunee, Wisconsin.

When inquiring specify EP1461... see information request blank, pgs. 16-17

## Water-Soluble Methyl Cellulose

American Production Now Replaces German Sources

**Uses**—Uses as an agent for dispersing, thickening, emulsifying, sizing and coating. For dispersing dyes, pigments, rubber latex and other materials difficult to disperse. Used for sizing warps in textile industry. Applications as thickening agent in cold water paints for interior service and in water phase of lacquer emulsions. Used as a binding agent in ceramic industry and in manufacture of lead pencils.

**Features**—Maker states that material applied to paper as a continuous surface coating produces a permanent barrier to penetration by oily or greasy materials. Coatings of material also prevent undue penetration by lacquers, varnishes or waxes during their application to paper. Surface application to paper acts to bind fibers and eliminate "linting" or "picking" during printing. Incrustation and adhesion are avoided when used for sizing warps. Easier to wash out than starch or gums and may be removed with cold water to give a softer cloth.

**Description**—Material to be known as "Methocel" is colorless, odorless, tasteless and non-toxic. It is readily soluble in cold water and generally used in form of aqueous solution. Methocel is dissolved most easily by first wetting the material thoroughly with hot water (80-100 Deg. C.). Mixture is then cooled to room temperature or below, preferably 5-10 deg. C. and stirred until smooth. Solutions may also be made by stirring in water at room temperature. Initial hot water treatment, however, hastens solution.

DOW CHEMICAL CO., Dept. EP, Midland, Michigan.

When inquiring specify EP1462... see information request blank, pgs. 16-17



## MATERIAL HANDLING EQUIPMENT



### READCO Dustless Weigh Hoppers

For semi-automatic weighing of powdered or granular material.  
Patented design controls dust at discharge.  
Extremely accurate, four point suspension weighing mechanism mounted on Hopper.  
Built of common metal or any commercial alloy in sizes from 10 cu. ft. up, mounted stationary or on trolley and track.

### READCO Material Handling Systems

For full-automatic or semi-automatic straight line handling of powdered or granular material from storehouse to point of manufacture.

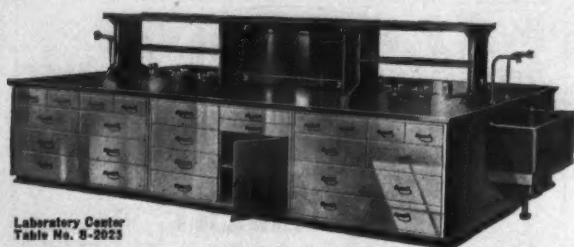
Units include Dump and Blending Bins, self cleaning Sifters, Conveyors, Bucket or Screw type Elevators, Storage Bins and Hoppers.  
Built in all sizes of wood, common metals or any commercial alloy.



The complete line of READCO Chemical and Industrial Equipment is illustrated and described in this catalog. A copy is "YOURS FOR THE ASKING." Write READCO today.

READ MACHINERY CO. INC., YORK, PA.

When inquiring specify EP1463... see information request blank, pgs. 16-17



Laboratory Center  
Table No. 8-2023

## GET FULL INFORMATION ON KEWAUNEE'S Superior Line Of Laboratory Wall Tables . . .

Write today for the Kewaunee Blue Book of Metal Scientific Laboratory Furniture. It's sent to buyers without charge. It brings you accurate illustrations and complete information on Kewaunee's full line of wall tables and other standard laboratory furniture units. Also fully explains Kewaunee's valuable engineering service, that's made available without cost to you. Write direct to —

**Kewaunee Mfg. Co.**  
LABORATORY FURNITURE EXPERTS

C. G. Campbell, Pres. and Gen. Mgr.  
320 Lincoln St., Kewaunee, Wis.

Eastern Branch: 220 E. 42nd St., New York, N. Y.  
Mid-West Office: 1208 Madison St., Evanston, Ill.

Representatives in Principal Cities

### Specify KARCITE MOLDED CERAMIC SINKS

Free from distortion—inert to solvents and mineral acids (except hydrofluoric). Will not crack or break under ordinary weight shocks and thermal shocks. Gray black color—smooth-surfaced—dull gloss finish. Lighter—stronger—easier to clean. Write for Catalog.



Karcite Sink No. 8-800

When inquiring specify EP1464 . . . see information request blank, pgs. 16-17

## MACHINES for remembering



Empire Meters remember what human minds are all too apt to forget. They remember the precise gallonage of base liquids delivered, produced, or consumed — remember to proportion ingredients exactly in blending and processing . . . to open a valve, or to close it . . . to snap a switch . . . even to compensate automatically for temperature changes as they occur!

Practically any fluid that will flow through a pipe can be metered by Empire Meters. By bringing out hidden shortages, waste, and the losses inherent in manual control, Empire Meters quickly pay back their cost — and go right on piling up savings.

Probably there are undiscovered spots in your plant where new applications of metering could save a lot of money. Why not let us help you to make a survey? A National Meter engineer is at your service — without cost or obligation — and you'll find his recommendations dependable. Write for particulars.

**NATIONAL METER COMPANY**  
PERFORMANCE PROVED

National Meter Company, 4295 First Avenue, Brooklyn, N. Y.

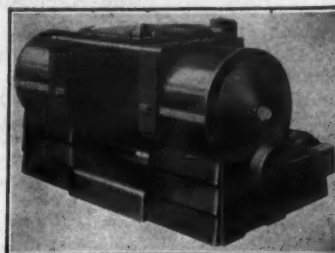
When inquiring specify EP1465 . . . see information request blank, pgs. 16-17

## Mixer-Kneader

Mixing Blades Designed to Reduce Power Needs

**Uses** — Particularly useful for mixing and treating heavy plastics and other tenacious materials.

**Features** — New stuffing box and mixer body design eliminate leakage. Mixer body mounted on large over-size center trunnions to prevent wear and settlement of load. Mixing blades designed to reduce power requirements and to speed up to any desired mixing cycle.



**Description**—Mixer body may be made of any desired material; can be arranged for operation under pressure or vacuum. Entire body, including ends and cover, may be arranged for heating or cooling. Body may be tilting or stationery, the stationery units being discharged by means of quick-acting valve or door. Dumping is achieved by means of inbuilt motor with push button control. Mixing blades may be heated or cooled, and are tangential or overlapping. All bearings throughout are anti-friction, oversize, running in oil. Gearing is wide-faced, quiet running helical cut steel gears, none of which are overhung, thus assuring freedom from gear and shaft stresses. All gearing is enclosed in oil-tight housing with splash lubrication to all parts of transmission system. Drive motor is integrally mounted with machine on the smaller sizes of unit, while larger units are driven by multiple or Vee-belts or other selective transmission. Seals and stuffing boxes are enclosed and protected from dirt and grease accumulations. Units are offered in any desired batch capacity up to 1500 gallons, in 60 different combinations of frames, sizes and horsepower. Experimental units are available from 1/2 gallon size and in various types and strengths.

**PATTERSON FOUNDRY & MACHINE CO., Dept. EP,**  
East Liverpool, Ohio.

When inquiring specify EP1466 . . . see information request blank, pgs. 16-17

## Salt Tablet Dispenser

Non-Corrosive Case Impervious to Salt Attack.



**Uses** — Convenient "station" for storing and dispensing salt tablets.

**Features** — Moisture-proof, specially plated aluminum case is non-corrosive (meets U. S. Navy anti-corrosive specifications) and is impervious to attack from salt. Large capacity — holds more than one thousand 10 or 15 grain tablets.

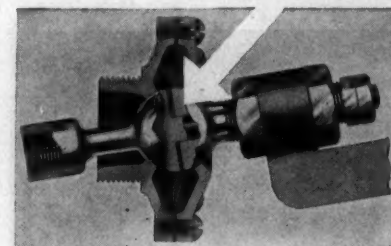
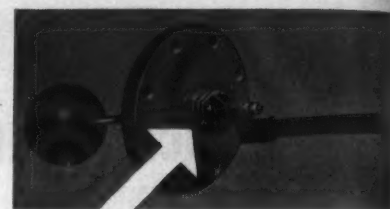
**Description** — Unit is heavy construction type, equipped with Yale lock which both safeguards contents

and locks unit to wall bracket. Tamper-proof construction damageable only with heavy blow from sledge hammer or other heavy instrument. Operation is mechanically simple—dispenses tablets one at a time.

**MILBURN CO., Dept. EP, 905 Henry St., Detroit, Michigan.**

When inquiring specify EP1467 . . . see information request blank, pgs. 16-17

## NOW! FLOAT CONTROLS for TANKS



**POSITIVELY  
sealed  
against  
LEAKAGE!**

**HERE** is a revolutionary new idea for process plant operating men who are trying to get as free as possible from all equipment that requires maintenance or attention. With the new "DIA-BALL" packless joint, Davis has replaced the old time stuffing box with a patented easy-flexing diaphragm seal which prevents leakage without resorting to the heavy frictional load of a conventional packing gland. Present service records indicate that in many instances these joints will require no attention during the entire life of the equipment they serve. This construction is now available on a wide range of Davis Liquid Level control equipment.

The assembly shown above is No. 168D with flange. It bolts directly to the tank nozzle and makes a simple, economical and very satisfactory installation where internal turbulence is not excessive. Ask for descriptive bulletin.

**DAVIS REGULATOR CO.**  
2562 S. Washtenaw Ave.  
CHICAGO, ILLINOIS

When inquiring specify EP1468 . . . see information request blank, pgs. 16-17

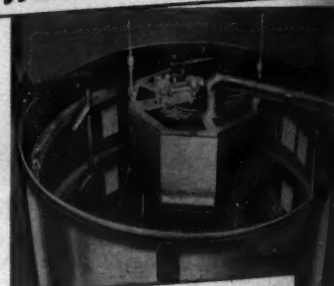
## SURFACE COATINGS HIGHLY RESISTANT TO WEATHERING

CAN BE QUICKLY AND ACCURATELY COMPARED IN THE

**NATIONAL ACCELERATED  
WEATHERING UNIT**

● This unit applies the weathering effects of water, light, air and thermal shock — always at the same intensity.

It provides a true standard of comparison which can be used at any season and in any location with comparable results.



USE THE "NATIONAL" ACCELERATED WEATHERING UNIT FOR PROMPT AND REPENDABLE INFORMATION ON THE WEATHER RESISTANCE OF LONG LIFE PRODUCTS

**NATIONAL CARBON COMPANY, INC.**

Unit of Union Carbide and Carbon Co.  
Carbon Sales Division, Cleveland, Ohio  
General Offices  
30 East 42nd Street, New York, N. Y.  
Branch Offices  
New York, Philadelphia, Chicago, St. Louis, San Francisco

When inquiring specify EP1469 . . . see information request blank, pgs. 16-17

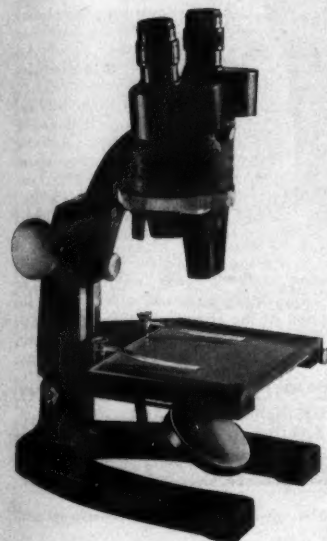


## INSTRUMENTS OF CONTROL

**New developments in control instruments  
for Production . . for Laboratory**

## Stereoscopic Microscope

### Extra Large Object Field, Critical Sharpness



**Uses**—For inspection of raw materials, work in process, and finished products; in manufacture of textiles, metal products, petroleum, chemicals, ceramics and in food industries such as canning, dairy, drugs, cereals, etc. Many laboratory applications in all types of research.

**Features** — Vivid stereoscopic image eases eye strain. Instrument has great depth of focus, an exceptionally large object field, and a high degree of resolution of fine detail giving critical sharpness to image.

or small specimens with quick changes in magnification. Objective lenses are held in dust-proof revolving objective holder. Base with mirror provides for work requiring transmitted light.

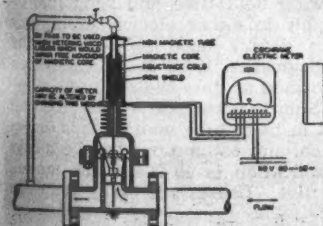
**Description**—Instruments are offered in four mechanical arrangements to cover wide range of uses. Magnifications range from 6.3X to 144X. Seven different powers in paired objectives and four different powers in paired eyepieces provide total of 28 different magnifications. Angle between axes of two elements of paired objectives is 12 degrees. In prism boxes, each line of light is bent 2 degrees toward center so that convergence at eyepieces is only 8 degrees — this dual convergence maintaining stereoscopic effect yet making it possible to work long periods without eyestrain. Catalog M86 gives complete specifications plus suggestions for proper selection of instrument and uses for various types of work.

**SPENCER LENS CO., Dept. EP, 19 Doat St., Buffalo, N.Y.**

When inquiring specify **EP1470**... see information request blank, pgs. 16-17

## Pipe Line Flow Meter

## Measures Fluids Which Can't Be Handled by Orifice Type Meters



**Uses**—For measurement of fluids having characteristics of viscosity, corrosiveness and solubility such as fuel oils (light and heavy grades), ammonia, hot tar, etc., which are beyond the scope of the usual orifice type flow meter.

**Features**—Flow is directly through meter body; has no mercury-sealed U-tubes or diaphragms; graduated in-

dicator and chart scales; negligible pressure loss; easy method of changing capacity range; wide range of available capacity ranges; unaffected by adjacent valves and fittings (no straight run of pipe is required); high accuracy at both low and high percentage scale readings.

**Description**—Meter is of area type, with meter body installed as integral part of pipe line, and containing a weighted disk positioned by fluid velocity through tapered throat section in such a manner that disk travel is directly proportional to flow rate. Attached to weighted disk is a rod and iron core, the latter traversing the field of two reactance coils surrounding pressure-tight tube of meter body. These coils form reactance bridge when connected electrically to similar coils in the indicating, recording and integrating instrument and form means of transmitting measurement to any desired distance from meter body. Measurement is accomplished in recording instrument using the galvanometer null principle.

Meter is made in different combinations of indicating, recording and integrating features to suit particular conditions, and may be equipped with pressure and temperature elements to record on same chart with flow. Styles are available for wall, column or flush panel mounting. Publication 2100 gives complete details.

**COCHRANE CORP., Dept. EP, 17th St. & Allegheny Ave., Philadelphia, Pa.**

When inquiring specify EP1471...see information request blank, pgs. 16-17

## Control Instruments for Pulp & Paper

Detailed information is given in this folder about applications of control instruments in pulp and paper manufacture. Shown are installations of "Micromax" instruments which record and sometimes automatically control temperature, condensate-purity, SO<sub>2</sub> pH, speed, flow and humidity. Also described are instruments for the laboratory and power plant. Broadside EN-0820 is available upon request.

**LEEDS & NORTHRUP CO., Dept. EP, 4935 Stenton Ave., Philadelphia, Pa.**

When inquiring specify **EP1472** . . . see information request blank, pgs. 16-17

## Low-Cost Flowmeter

### Self-Contained Unit Requiring No Extra Parts



**Uses**—For measuring rate of flow of gases and for vacuum work.

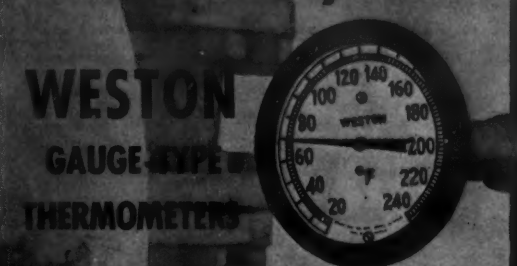
**Features**—Simple, improved construction of "Pyrex" balanced glass. Low cost instrument. Filling is fast and easy.

**Description** — Four orifices approximately  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 and 2 mm are provided in a hollow stopper. Selection is made by turning stopper to desired orifice. Direction of flow is also indicated. Instrument has heavy walls and a scale ranging from 0 to 160 mm which is acid etched and red pigment filled. This manometer is available in two types — straight side arm and "T" arm.

**CORNING GLASS WORKS, Laboratory Div., Dept. EP,  
Corning, N. Y.**

When inquiring specify **EP1473** . . . see information request blank, pp. 16-17

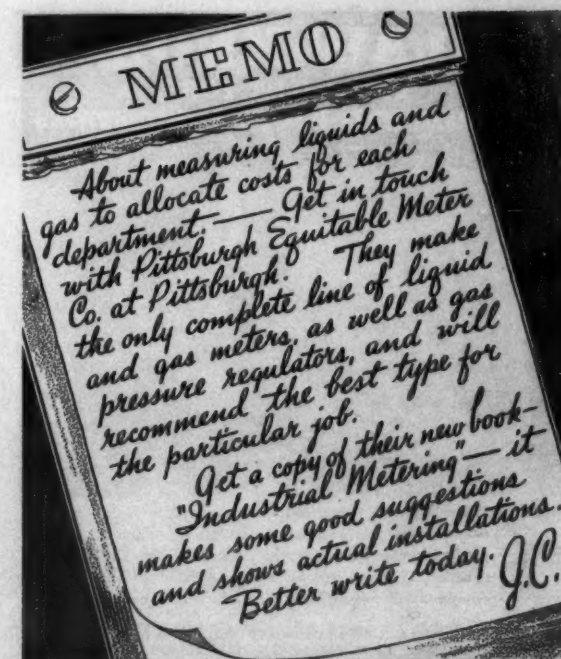
## Readable - Anywhere!



Out-of-reach doesn't mean out-of-reading-range when WESTON Industrial Thermometers are used. Their large, gauge-type faces with bold scale markings are easy to read . . . and read accurately . . . a good distance away. That's why you see so many WESTONs on overhead lines, and on equipment in hard-to-get-at locations. In addition, the rigid, all-metal construction of these modern thermometers makes installation easy . . . reduces breakage losses . . . and prevents damage from over-temperatures. Available in sizes, ranges and stem lengths to meet most industrial temperature requirements. Be sure to send for catalog, Weston Electrical Instrument Corporation, 585 Frelinghuysen Ave., Newark, N. J.

Send for complete catalog

When inquiring specify EP1474 . . . see information request blank, pgs. 16-17



## INDUSTRIAL METERS

FOR ALL LIQUID AND GAS SERVICE

PITTSBURGH EQUITABLE METER COMPANY

MEMCO NORDSTROM VALVE CO.

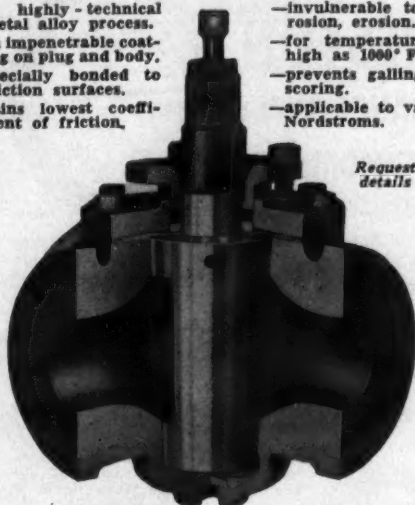
When inquiring specify EP1475...see information request blank, pgs. 16-17

## NORDSTROM MERCHROMED VALVES

### MULTIPORT TYPE FOR CHEMICAL SERVICE

(Merchroming is a new development)

- a highly-technical metal alloy process.
- an impenetrable coating on plug and body.
- specially bonded to friction surfaces.
- gains lowest coefficient of friction.
- invulnerable to corrosion, erosion.
- for temperatures as high as 1000° F.
- prevents galling and scoring.
- applicable to various Nordstroms.



Request details

## MERCO NORDSTROM VALVE CO.

A Subsidiary of Pittsburgh Equitable Meter Co.

Main Office: Pittsburgh, Pa.

Branches: New York City, Buffalo, Philadelphia, Columbia, Memphis, Chicago, Des Moines, Kansas City, Tulsa, Houston, Los Angeles, Oakland.

When inquiring specify EP1476... see information request blank, pgs. 16-17

## BLAW-KNOX

### EQUIPMENT FOR CHEMICAL AND PROCESS INDUSTRIES



The equipment illustrated was designed to blend granular materials with extreme uniformity. It avoids product contamination through stainless steel construction, is completely engineered throughout and equipped with proper drive, speed control and brakes.

BLAW-KNOX DIVISION OF BLAW-KNOX CO.  
FARMERS BANK BUILDING - PITTSBURGH, PA.

Offices in Principal Cities

BLAW-KNOX PROCESS EQUIPMENT INCLUDES: Inclined High Velocity Evaporators... Vertical High Velocity Evaporators... Forced Circulation Evaporators... Rotary Dryers... Autoclaves... Vacuum Rotary Dryers... Extraction Apparatus... Distillation Equipment... Hot Oil Circulation System... Vulcanizers... Absorbers... Impregnating Equipment... Solvent Recovery System... Heat Exchangers... Condensers... Mixing Equipment... Distilled Water Evaporators.

When inquiring specify EP1477... see information request blank, pgs. 16-17

## Control Instruments (Con.)

### Liquid Level Control

Unaffected by Temperatures or Operating Pressures



**Uses**—Operating principle and structural characteristics permit handling all chemicals with very little, if any, changes other than types of metals needed to handle specific chemicals. One model has single switching action which may be used as low water cutoff on steam boiler, or to operate pump or energized valve in connection with tank or other liquid level application. Another model has 3 stages of liquid level control for use as low water cutoff, pump control, and high water cutoff on boilers, or for stage control of other liquid level applications. Units will handle, in a general sense, chemicals involved in the refrigerating processes and for solvenizing purposes.

One model, a hermetically sealed unit, is designed for use on all hydro carbons such as freon, propane, butane, ethyl chloride, sulphur dioxide, etc. Same model will handle methyl alcohol, chloroform, toluene, aniline, trichloroethylene, etc. (More complete list from manufacturer).

**Features**—Simple, positive switching action in "Mag-netrol" eliminates all bellows, stuffing boxes, packing and rotary shafts, which have binding, sticking, breaking and rupturing possibilities. Unit is unaffected by temperature or operating pressures. Alarm circuit may be incorporated in either of two standard models. Model for ammonia and other chemicals has 18-8 type 304 polished stainless steel screen enclosing switching mechanism to prevent heat transfer into float chamber body, otherwise causing frost precipitations to form on screen and switching mechanism. By this method of screening, frost precipitation is eliminated by heat dissipation.

**Operation**—Unit employs simple switching action in float type liquid level control. This action is obtained through rise and fall of piston attached float rod moving up and down in inclosing tube. As piston reaches predetermined level in tube, it comes into magnetic field produced by permanent magnet located outside of inclosing tube. When this action occurs, magnet is drawn toward piston, thereby causing a tilt action of mercury-to-mercury switch, which is part of magnet relay arm.

**Description**—Construction of ammonia unit is chrome nickel iron body casting and heat casting of same material with 6 steel cap screws and sealed with gasket. Float ball and other internal construction are stainless steel with all other connections of silver solder brazing. On standard ammonia model there is one relay and mercury switch having 2" operating range, thus permitting an easy adjustment one inch up or down to increase or decrease liquid level in reservoir to meet best operating conditions. Unit has magnet with life expectancy of over 30 years with loss of less than 1% of magnetism. G.E. mercury-to-mercury switches handle 1 H.P. single phase motor on A-C. current or ½ H.P. motor on D-C. current. Has glass insulated lead wires to withstand high temperatures. Bulletin No. 140 shows construction details.

FRED H. SCHAUB ENGINEERING CO., Dept. EP, 327 West Huron St., Chicago, Ill.

When inquiring specify EP1478... see information request blank, pgs. 16-17

### Photomicrographic Equipment

General discussion of "Factors in Photomicrography" is an important feature of this well-handled, 24-page catalog. Numerous photographs display many types of instruments to best advantage. Detailed explanations make the book complete on such subjects as ultra-violet optics, ortho-stereo cameras, low power photomicrography, optical accessories, etc. Catalog E-21 is available. BAUSCH & LOMB CO., Dept. EP, Rochester, N. Y.

When inquiring specify EP1479... see information request blank, pgs. 16-17

## These "Stanzoids" Protected Hands

a Whole  
Year in  
16 Liquids



This pair of "Stanzoid" Industrial Gloves, made of resistant Du Pont Neoprene, was used continuously in plating and printing departments in a lithographing plant. For more than 12 months, they protected employees' hands from acids, solvents and solutions, including some that are most corrosive to gloves made from other materials. Even then, the only "failure" was a tiny tear near the right thumb.

Your employees will appreciate this assured protection to hands—your own costs may be largely reduced by "Stanzoid" Gloves for men and women. Send for description of the above interesting demonstration. Arrange to test "Stanzoids" for yourself. Our liberal trial plan makes it easy. Write today.



THE PIONEER RUBBER CO.  
239 TIFFIN ROAD, WILLARD, OHIO, U.S.A.  
New York • Chicago • Los Angeles

MADE WITH DU PONT NEOPRENE

When inquiring specify EP1480... see information request blank, pgs. 16-17

## "Flash-O-Lens"

Illuminated Magnifier

**Uses**—Two models, one with wide field tube has many uses in shop and factory in inspection work such as raw materials, castings, welds, laying out fine work, etc., other model is a shop microscope for routine inspection of product and process equipment.

**Features**—Can be used in darkest part of plant. Instrument has high eye-point position enabling wearer of glasses to observe entire field without discomfort. Unit is easily portable. All parts are interchangeable. Comes in both electric and battery models. Light does not strike the eye. Side opening in lens housing makes possible use of instruments or pencil on object under observation.

**Description**—Both the wide field tube and shop microscope models are available in either electric or battery light sources. Uses the double lens system. On the wide field tube the magnification is 20 X. An inverted and reversed image is formed as does the ordinary mon-objective microscope. Shop microscope model has an engraved scale mounted in body tube which reads direct to thousandths of an inch, and estimations can be easily made to .00025". Magnification is 40 X in this model. Plugs into AC or DC outlet. Lenses are easily removed for cleaning.

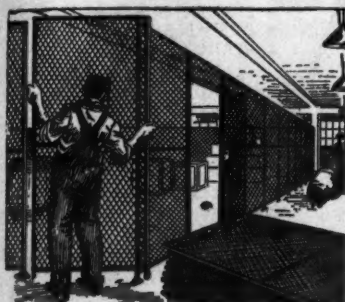
E. W. PIKE & CO., Dept. EP, 1049-A Harding Road, Elizabeth, New Jersey.

When inquiring specify EP1481... see information request blank, pgs. 16-17



## STOP LOSSES WITH STANDARDIZED OPEN MESH PARTITIONS

Modern Plant Layout Requires  
A Place For Everything



Prevent loss and damage of equipment, tools, parts, materials and finished products.

Idle floor space—anywhere in the plant—can be utilized in a very short space of time by simply erecting an enclosure of Acorn Standardized Panels.

The open mesh allows free circulation of heat, light and air. Can be arranged to suit new conditions at any time. Carried in stock for immediate delivery.

Ask for FREE Catalog — Write

**ACORN** WIRE & IRON WORKS  
5907 S. Lowe Ave., Chicago

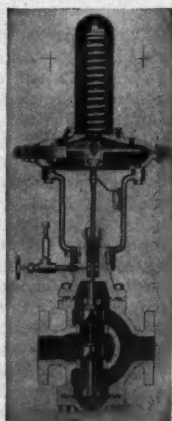
When inquiring specify EP1482... see information request blank, pgs. 16-17

## High Lift Valve For Automatic Control Use

Has Rangeability of 50 to 1

**Uses**—For accurate response to demands of modern automatic control instruments.

**Features**—Equipped with wide range V-port plunger, valve has rangeability of 50 to 1. When valve is lifted off seats, initial clearance flow is 2%. From this 2% flow to 100% flow, valve gives equal percentage increases in flow for equal amounts of valve lift. Body and plunger of valve are designed for high lift, a necessary feature to produce valve with wide range flow characteristics which automatic controllers require. High lift construction also affords twice the movement for same air pressure change as ordinary valves. Suspended construction of floating power motor eliminates need for guides and anti-friction bearings. Spider construction of guide supports prevents sediment deposit which would otherwise interfere with valve operation.



**Description**—V-port plunger is screwed and pinned to valve stem and designed for easy field reversal. Parabolic plug and wide radio turned plug types are also available for exceptional control applications. Motor may be removed without disturbing motor adjustments or relation between valve and motor. Excess friction is combatted in one-piece bonnet and stuffing box assembly. Bonnet is joined to valve body with ground tongue and groove connection, assuring perfect alignment of body and bonnet. Stainless steel gland nut and packing follower need

never be more than finger tight, eliminating trouble from rusty threads. Ring type packing is used for tighter sealing. Plungers are provided with top and bottom guides of polished stainless steel. Unit has deep lubricated stuffing box and stainless valve stem.

FOXBORO COMPANY, Dept. EP, Foxboro, Mass.

When inquiring specify EP1483... see information request blank, pgs. 16-17

## Recording and Indicating Controllers

Three Process-Control Effects In One Unit

**Uses**—Air-operated instruments—recording and indicating controllers for temperature, pressure, rate of flow and liquid level.

**Features**—Instrument has, in addition to proportional response and automatic reset forms of control, a third process-control effect — Pre-Act. Pre-Act is a supplementary control feature which makes control-valve corrections according to rate of control-point deviation. In response to sudden disturbances in process or variations in controlling medium, over-peaking or oscillating is greatly reduced by an immediate and relatively larger control-valve action than would otherwise occur. Also Pre-Act stabilizes operation after a change in set point and when equipment is started up. Automatic reset is fully adjustable over much wider range than previously. Relation between pen movement and output air pressure is so linear that instrument may be used for remote pneumatic transmitter. Interchangeable unit construction permits easy conversion from one form to another in the field.

**Description**—Adjustment in sensitivity, automatic reset rate and Pre-Act time is provided by magnified dials, calibrated in absolute units. Die-cast aluminum case for face or flush mounting. All cases are drilled and tapped to accommodate most complete forms of controller mechanisms. Recording instruments are available with two complete control mechanisms with any combination of actuating systems except two manometers. Simplified air system includes relay air valve with precisely drilled sapphire orifice; removable 18-8 stainless steel nozzle; inbuilt metal-disc auxiliary air filters supplement large external filter; air gauges inside case; operates on 20-lb. sq. in. air supply. Electric chart clock also available in explosion-proof housing. Spring driven clock is optical. Neoprene gaskets throughout. Available in five standard types.

TAYLOR INSTRUMENT COMPANIES, Dept. EP, Rochester, N. Y.

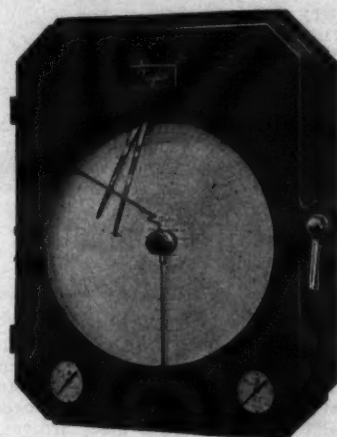
When inquiring specify EP1484... see information request blank, pgs. 16-17

## Electric Heaters and Controls

New 28-page catalog describes these devices for application of electric heat in processing and laboratory service. One section gives useful information on selection of types and sizes of heaters and controls suitable for given conditions, temperature conversion charts, etc. Various types of heaters and controls are described in detail with specifications for each. Catalog 2075-EP is available upon request.

AMERICAN INSTRUMENT CO., Dept. EP, 8616 Georgia Ave., Silver Spring, Maryland.

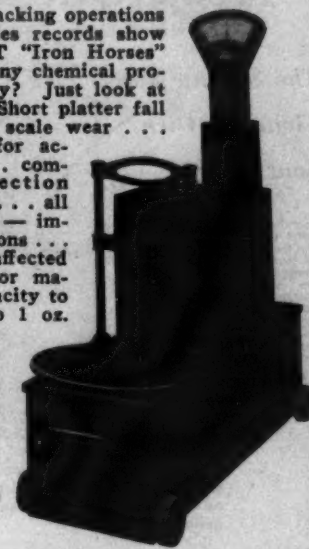
When inquiring specify EP1485... see information request blank, pgs. 16-17



## for Heavy Duty Check- Weighing Operations...

Are you meeting your sacking operations economically? Our sales records show that EXACT WEIGHT "Iron Horses" are doing the job in many chemical processing industries. Why? Just look at these special features: Short platter fall which eliminates much scale wear... long indicator travel for accuracy with speed... complete dash-pot protection against foreign matter... all working parts enclosed — important in dusty operations... weighting accuracy unaffected by out-of-level floors or machinery vibration. Capacity to 150 lbs. — sensitive to 1 oz. over and underweight. If you have a tough sacking operation we believe the EXACT WEIGHT Iron Horse or its six modifications will solve your weighing problem.

Write for complete specifications for chemical processing operations. Do it today!



THE EXACT WEIGHT SCALE CO.  
31 W. Fifth Ave. Columbus, Ohio

There is no substitute for Exact Weight.

When inquiring specify EP1486... see information request blank, pgs. 16-17



# NEW

## "LIGHTNIN" LABORATORY MIXER... Duplicates Large Scale Mixing Action

Only 1/30 H.P. in size but equally useful for mixing in a 300 c.c. beaker or gently agitating a 20-gallon tank, the new "LIGHTNIN" Model F Mixer has a multitude of uses in the laboratory and in small plant operation. Adjustable speed friction drive provides constant horsepower at the propeller and increasing torque at slow speeds. Useful over a wide range of viscosities. No gears to wear out or rheostat to buy. No commutator or switch.

The Model F may be used as a hand mixer without attaching, or may be clamped direct to mixing container. Special ring stand clamp greatly increases laboratory usefulness. Convenient handle for carrying or mixing. Recommended for use with inflammable materials since motor is totally enclosed.

Available in 110 or 220 volt, 60 cycle, 1 phase A.C. current. Model V — Gear Drive 1/42 H.P. and Model L — Direct Drive 1/30 H.P. also available for small scale operations. Write for new catalog — B-67 — "LIGHTNIN" Laboratory Mixers — which describes our complete line of small mixers.

MIXING EQUIPMENT COMPANY, Inc.  
1005 GARSON AVENUE ROCHESTER, N. Y.

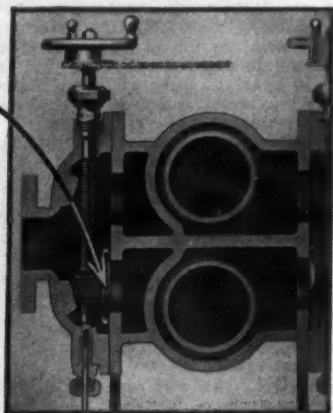
When inquiring specify EP1487... see information request blank, pgs. 16-17

## TWIN STRAINERS

### Keep Out Trouble!

*The Sliding Gate  
Cleans Its Own  
Seat*

Operation of a gate valve shifts the flow of liquid from the fouled strainer basket to its twin. This valve must be immune to imperfect closing due to particles of foreign matter—and in the ELLIOTT Twin Strainer this factor has been ably met, with a valve disc that brushes off and cleans its own seat just before it is closed. Thus Twin Strainers keep trouble away from THEMSELVES as well as out of the equipment which they protect.



Twin Strainers operate continuously — No time out for cleaning—One basket and chamber always ready to take on the load. Simple to clean, too. Write for descriptive bulletins.

A-253

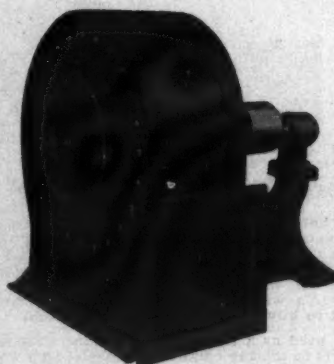


## ELLIOTT COMPANY

Accessories Dept., Peterson St., JEANNETTE, PA.

When inquiring specify EP1488... see information request blank, pgs. 16-17

## "Buffalo" Can Design the Fan for It!



Each chemical plant has its own particular acid fume handling problem. Some require rubber-lined fans, others lead-lined or other special metal exhausters.

Whatever your particular problem, give us the facts, and we will supply the right fan to do the work right and at lowest service cost to you.

### BUFFALO FORGE COMPANY

100 MORTIMER ST. BUFFALO, N. Y.  
Branch Engineering Offices in Principal Cities  
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

## "Buffalo" SPECIAL FANS

for the Chemical Industry

When inquiring specify EP1489... see information request blank, pgs. 16-17

## Control Instruments (Con.)

### Recording Thermometer

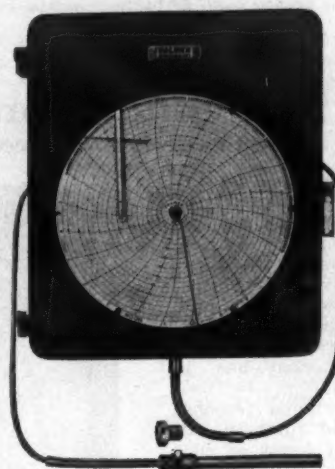
Mercury Actuated—Stainless Pen & Bulb

**Features** — Invar metal used to compensate for room temperature and compensating system is so built that it practically eliminates any capillary and case errors. Pen arm not in way when filling pen. No steel parts except Bourdon spring. Patented doorlock provides tight seal, no matter how old rubber used for sealing door.

**Description** — Standard 12" chart size. Aluminum case for wall mounting, and flush mounting furnished also. 12 and 24-hour spring wound clock, with electric clock optional. Each recorder equipped with five feet of flexible tubing — consists of stainless steel, mercury-filled capillary and special design spiral stainless steel armor. Stainless steel bulb, mercury-filled. All joints atomic hydrogen welded. And standard range will be furnished—minus 40 to 800 deg. F. or C. and plus 200 to 1000 deg. F. and C. Each recorder is supplied with 100 charts, bottle of recorder ink with filler for pen and key for lock. Connection is at bottom of case, but back connection may be specified.

PALMER COMPANY, Dept. EP, 2501 Norwood Ave., Cincinnati, Ohio.

When inquiring specify EP1490... see information request blank, pgs. 16-17



### Direct-Reading, Self-Contained pH Tester

Full pH Range—Acid or Alkaline

**Uses** — This portable, moderate-priced instrument is designed for plant, laboratory or field use.

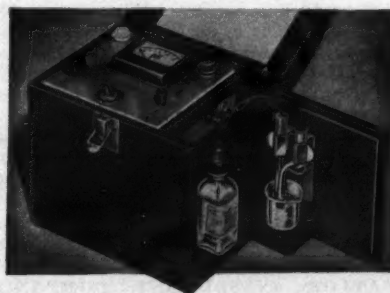
**Features** — Two simple operating features give direct reading. Instrument

uses sealed glass electrode. Weighs but 10 pounds, ready for use. Covers full pH range.

**Description**—Unit is battery operated. Has glass electrode filled and sealed, ready for use. Calomel electrode is ready for use with addition of potassium chloride solution supplied. No ground joint is used. Single tube amplifier is built in. Housed in walnut cabinet, 6x8x9". Sample is simply poured into ordinary 30 ml. Pyrex beaker and placed on support block. No slides, clips or clamps are needed. Scale is 1-11 pH, but this may be shifted, when calibrating, to 0-10 pH or to 2-12 pH range when required.

WILKENS-ANDERSON CO., Dept. EP, Room 501, 111 North Canal St., Chicago, Ill.

When inquiring specify EP1491... see information request blank, pgs. 16-17



## ALL OVER THE WORLD THEY PUT IT UP TO EASTERN

### FOR MIXERS

#### Complete Line

of High-Speed and Geared Models for the Fast, Economical Mixing of All Fluids. Built for Hard Service.

- SIDE ENTERING AGITATORS
- PORTABLE MIXERS
- VERTICAL TYPES

Expertly designed to meet YOUR particular mixing problem.

WRITE FOR FREE CATALOG

containing important data on mixing problems.



Model H1  
Portable  
SATISFACTORY  
PERFORMANCE  
GUARANTEED

Model  
Seg-9

SIDE ENTERING TYPE  
RIGID ALIGNMENT prevents wear and leaks.

MOUNTED on heavy cast ribbed bases. SUPPORTED on adjustable pedestals.

**EASTERN ENGINEERING COMPANY**  
49 FOX STREET NEW HAVEN, CONN.

When inquiring specify EP1492... see information request blank, pgs. 16-17

## Radiation-Type Thermo- Couple Furnace Control

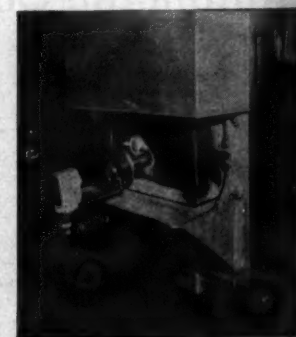
**Uses**—For use wherever exceptionally high sensitivity and very rapid response are needed. Designed for use of controlled protective-atmosphere furnaces for processing materials at high temperature. Possible applications include temperature measurement and control in brazing, heat-treating furnaces, glass heat-treating, infra-red drying and solar radiation. Useful in controlling temperatures of rapidly moving objects and materials on conveyors through furnaces.

**Features**—This radiation-type, vacuum thermocouple has no physical contact with high-temperature furnace parts and cannot be damaged from such temperatures. Temperatures from 300 to 1500 deg. C. can be read on millivoltmeter or potentiometer. Still higher temperatures can be handled by addition of protective screens or filters between thermocouple and heat source.

**Description**—Enclosed in a vacuum, thermocouple consists of very thin filament of two different metals, blackened on one side. Radiant energy acting upon thermocouple produces electromotive force which is transmitted to millivoltmeter or potentiometer which can be calibrated in degrees. Device may be mounted temporarily or permanently upon a furnace, the only accessory needed being a closed-end tube in furnace to prevent fogging of lens and to form target upon which to sight thermocouple.

GENERAL ELECTRIC CO., Dept. EP, Schenectady, N. Y.

When inquiring specify EP1493... see information request blank, pgs. 16-17



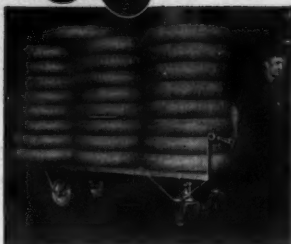


## New GENERAL JUMBO JR. CASTER UNITS

For front-end Application



Shown above is an experimental truck, designed and built by The General Tire & Rubber Co., especially for industrial pneumatic tires and featuring new caster units for front end application... a special 12" 6-ply Jumbo Jr. tire, tube and heavy-duty wheel combination. The rear tires are regular 22" 6-ply Jumbo Jr. Lower photo shows same truck carrying 2000 lbs. payload with perfect performance. For further information on this interesting new General Jumbo Jr. caster



development... or for information on how the complete line of Jumbo Jr. can be adapted to your particular equipment, write,

THE GENERAL TIRE & RUBBER COMPANY • AKRON, OHIO

## GENERAL JR. INDUSTRIAL BALLOON TIRES

When inquiring specify EP1494... see information request blank, pgs. 16-17

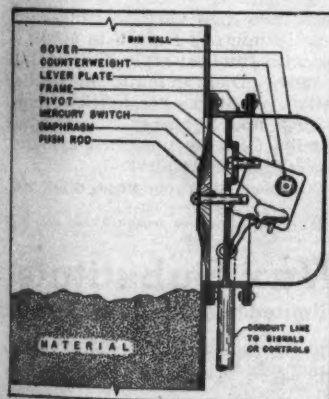
**Synchronous Motor Driven Time Delay Relay**  
Bulletin F-2 covers this relay, giving such information as "What it does, its uses, design features, construction and specifications." Photos and drawings supplement the descriptive material.

R. W. CRAMER CO., INC., Dept. EP, Centerbrook, Conn.

When inquiring specify EP1495... see information request blank, pgs. 16-17

## Bin Level Indicator

Fiberglass Diaphragm Handles Materials At High Temperatures



**Uses**—For indicating and automatically controlling high and low levels of bulk materials, liquids or semi-liquids in conveyors, elevators, feeders, weighing devices and other machinery.

**Features**—Use of Fiberglass as diaphragm material permits applications handling fly ash, flue dust, fullers earth and similar materials, all at high temperatures—allows greater flexi-

bility of operation. New cast aluminum cover aids in making weathertight connection when used outdoors—makes for sturdier construction. Simple construction—no springs or lubrication.

**Description**—Made in two models—"A" for mounting on thin walls and "C" for inside mounting, in concrete or multiple-compartment bins—both operating mechanisms

the same. Explosion proof model also available. Can be mounted vertically, horizontally or in intermediate angles—adapters available for mounting on cylindrical or conical surfaces. Switch is single-pole, single-throw mercury with A.C. rating: 15 amps. @ 125 volts; 10 amps. @ 250 volts; 8 amps @ 550 volts. Switches may be mounted "normally-open" (pressure of material will close switch), or "normally closed" (pressure of material will open switch). Model A is 10 1/4" O.D. and 6" deep.

**Operation**—Pressure of material forces diaphragm outward against counterweighted lever system, tipping lever-plate and actuating mercury switch.

**BIN-DICATOR CO., Dept. EP, 14600 E. Jefferson Ave., Detroit, Michigan.**

When inquiring specify EP1496... see information request blank, pgs. 16-17

## DEMAND METER

Strip-Chart Recording

**Uses**—May be employed for single circuit demand metering or for totalizing demands of two circuits. In combinations with totalizers or totalizing relays, it may also be used to record totalized demand of any number of circuits.

**Features**—Instead of conventional plunger, coil and ratchet arrangement the meter is actuated by Telechron motors controlled by three-wire contacts. Unit is suitable for wide range of load demands and provides a continuous record of at least one month's operation on a chart six inches wide.

**GENERAL ELECTRIC CO., Dept. EP, Schenectady, N. Y.**

When inquiring specify EP1497... see information request blank, pgs. 16-17



## Multiple Point, Self-Balancing Indicator



**Uses**—One of three models especially adapted where a large number of temperatures are to be measured.

**Features**—The "Hair-Line Indicator" model, for numerous temperature measurements is designed to cross ten inches

of scale in ten seconds. Indicator will balance on successive points more rapidly than an operator can record them.

**Description**—In addition to the "Hair-Line Indicator" model, two other models are available: one having 22 seconds for carriage to cross scale; the other requiring 45 seconds. A switch box or combination of boxes, of same design as instrument case, can be supplied for an unlimited number of points. Units have special arrangement for lighting the scale, this being accomplished with use of a "Lucite" rod which carries the illumination from same source of light that is used to determine galvanometer position. An "In balance" signal light is provided on "Hair-Line" model which lights signal when carriage travels from one point to next, flickers when it steps into balance, and stays out when it is time to take reading.

**C. J. TAGLIABUE MFG. CO., Dept. EP, Park & Nostrand Aves., Brooklyn, N. Y.**

When inquiring specify EP1498... see information request blank, pgs. 16-17

To secure **EQUIPMENT PREVIEW** for your key men, turn to 'request slip'... pages 16 and 17.

## THE LATEST in INDUSTRIAL MIXERS

by

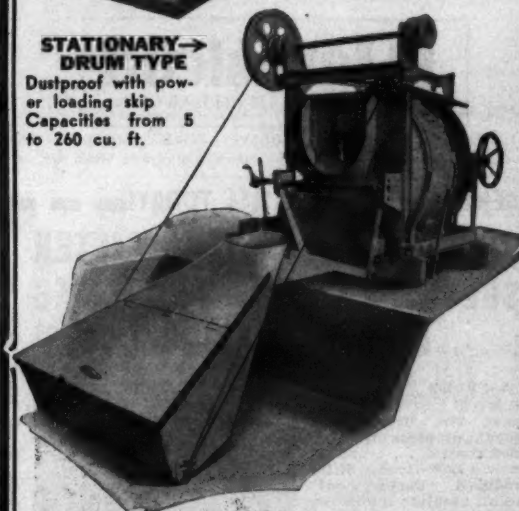
*Ransome*



**←DUST PROOF TILTING TYPE**  
Ideal for small batches or laboratory work. Also used as tumbler for cleaning and burnishing various materials. Capacities—4 cu. ft. and 8 cu. ft.

### STATIONARY DRUM TYPE

Dustproof with power loading skip. Capacities from 5 to 260 cu. ft.



**←EASY HANDLING CART**  
Timken Roller Bearing Pneumatic Tired Wheels. Capacities—6 1/2, 9 and 11 cu. ft.

### RANSOME—BUILDER OF MIXERS SINCE 1850

Dustproof mixers and blenders for chemicals, glass batches, fertilizers, dyes, composition flooring, zinc ores, refractory materials, insulating cements, enamel frits, plastics, powdered glue, tobacco, stock feeds, etc.

Send for the Details  
Industrial Division

**RANSOME CONCRETE MACHINERY COMPANY**

DUNELLEN,

NEW JERSEY

When inquiring specify EP1499... see information request blank, pgs. 16-17



**NEW  
BAYONET HEATER...**  
MAKES  
**BARNSTEAD WATER STILL'S  
EASIER TO CLEAN**

Barnstead Extra Duty Steam-Heated Still for laboratories now have the easiest cleaning arrangements yet developed. On the 1, 2, and 5 gallon per hour stills, especially designed for hard water distillation, the new Barnstead Bayonet Heater is now standard equipment. By simply unscrewing a collar by hand, the complete heating unit is drawn out of the

evaporator for instant and easy cleaning. In this way it is possible to keep the still 100% efficient with no trouble.

Many other desirable features, including the new, easy-to-clean bleeder, are now available with the latest modern Barnstead Water Still. Send for complete information.

**Barnstead**  
STILL & STERILIZER CO. Inc.

46 LANESVILLE TERRACE, FOREST HILLS, BOSTON, MASS.  
When inquiring specify EP1500... see information request blank, pgs. 16-17

**SEND FOR LEAFLET 2354 TODAY!**

**HOW NEW LOW-HEAD SIFTER  
SOLVES PROCESS PROBLEMS  
... LOWERS SIFTING COSTS!**

**SLIPPERY, HARD-TO-HANDLE GRAPHITE** gave one processor a tough problem in product control... until a new Low-Head Sifter reduced "dusting out" to an absolute minimum. And with it they got a cleaner separation, a more salable product!



**PROCESSING CINNAMON** for a competitive market called for lower costs... but the same high quality. With a Low-Head Sifter this World-famous spice processor now gets uniform granulation WITHOUT waste... because it uses every ounce of raw material!

And modern processors are putting this compact, heavy-duty Sifter to profitable use in scores of other ways—resifting chemicals, removing foreign matter from starch, flour and clay, grading sugar, rock dust, foundry sand, handling ground scrap rubber!

For facts on how your products can be more efficiently sifted or graded with a Low-Head Gyrotory Sifter, get your copy of Leaflet 2354 today!

A1243

**ALLIS-CHALMERS**  
MILWAUKEE, WISCONSIN

When inquiring specify EP1501... see information request blank, pgs. 16-17

**Control Instruments (Con.)**

**Reset Timing Relay**

**Large, Clock-Face Dial Shows Cycle Progress**



**Uses**—This fully automatic, instantaneous reset timer is designed for industrial machinery and processing applications.

**Features**—Switch has 3/4" diameter silver alloy contacts for handling large loads, thus eliminating, in many applications, use of contactors or relays. Slow-speed motor consumes only 5 watts. Clock-face dial assembly shows finished and unfinished portions of time cycle at a glance. Timer has shock absorbing device to

cushion blow of solenoid operation, thus insuring smooth operation for both energizing and de-energizing strokes and prolonged life of timer.

**Description**—Timer is synchronous, motor driven and has S.P.D.T. switch for external control. Adjusting knob with time setting pointer is located directly in front for convenience in adjusting time intervals. Solenoid controls a clutch having 2 discs with rip saw teeth for positive gripping action. Timer can be adjusted for clutch engagement either when solenoid is energized or de-energized. Dial face is 4" diameter with aluminum finish and black indicating lines and figures. Complete assembly enclosed in cabinet for flush or surface mounting. Two standard models available: one with cycle range from 0 to 120 seconds, and the other with range from 0 to 20 minutes; special cycles furnished upon request.

**EAGLE SIGNAL CORP., Dept. EP, Moline, Ill.**

When inquiring specify EP1502... see information request blank, pgs. 16-17

**Mechanical Flow Meters**

Booklet of 12 pages and two colors illustrates and describes the maker's line of mechanical flow meters—indicating, recording, integrating and controlling. Well-handled cut-away photos show operating details, with major features enlarged to more clearly show construction details. Charts and accessories for instruments are covered. Catalog 2203 is available.

**BROWN INSTRUMENT CO., Dept. EP, Wayne & Roberts Aves., Philadelphia, Pa.**

When inquiring specify EP1503... see information request blank, pgs. 16-17

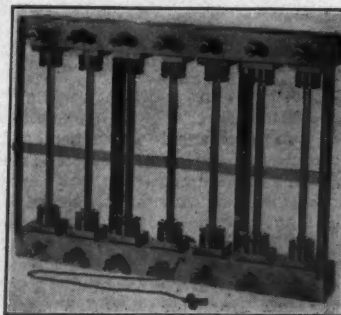
**Multiple Tube Flowmeter**

**Each Tube Can Be Completely Isolated**

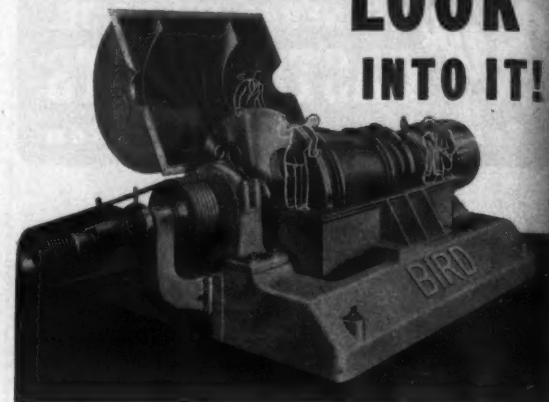
In this new device, two or more rotameters can be arranged for mounting in a single integral set of fittings where desirable.

**Features**—Each metering tube can be completely and separately isolated. Each tube and float can be individually removed for cleaning as stuffing boxes are removable. By adjusting individual needle valve settings, operator can maintain all floats at same height and flows at same value, using lucite indexing scale provided.

**Description**—Illustration shows seven tubes built into one set of fittings. These are made of square bar stock arranged so that assembly can be fastened directly against panel board. Needle type combination control



**LOOK  
INTO IT!**



This BIRD Continuous Centrifugal Filter separates or classifies crystalline or amorphous solids, varying in size from a fraction of a micron to 3/4" mesh. It handles large or small volumes of thick or thin slurries. It gives a dry cake, clear filtrate, efficient wash. Requires no filter screens, cloths, vacuum or auxiliaries. Takes little floor space, little power.

Find out what this Bird Filter can do for you. Write

**BIRD MACHINE COMPANY**  
SOUTH WALPOLE, MASSACHUSETTS

When inquiring specify EP1504... see information request blank, pgs. 16-17

and shut-off valves are built into bottom fitting and plain shut-off valves into top fitting. In assembly illustrated, a single inlet connection is tapped into back of bottom fitting. Longitudinal passage distributes flow to individual metering tubes. Seven separate outlet connections are tapped into back of upper fitting. In present instance, no handwheels are used on valve stems, a key being provided to operate them. Suitably labeled or colored bakelite handwheels can be provided.

**FISCHER & PORTER CO., Dept. EP, 113 West Penn St., Philadelphia, Pa.**

When inquiring specify EP1505... see information request blank, pgs. 16-17

**Portable High Vacuum Gauges**

This new leaflet describes two high vacuum gauges... Model A, having a range in microns from 0 to 5000... Model B, from 0 to 700, with smallest scale division 1/10 micron. Model B is new. Diagrammatic illustration shows method of operation. Features are quick-reading, safe portability, ruggedness and lightness... accurate readings claimed obtainable even by unskilled operator. Prices are included. Available on request.

**F. J. STOKES MACHINE CO., Dept. EP, Tabor Road, Olney P.O., Philadelphia, Pa.**

When inquiring specify EP1506... see information request blank, pgs. 16-17

**Montan Wax Substitute**

**Low Cost—Unlimited Supply Available**

**Uses**—As a replacement or substitute for Montan wax, "Monten" wax has found satisfactory use in the rubber and other industries.

**Description**—This low cost compounding wax is available in unlimited quantities. It is a black wax having the general properties and utility of natural Montan wax. Prices at Boston are 10 1/2c per pound in ton lots, 11c in less than ton lots, and 15c a pound in 10 lb. containers.

**THE BEACON CO., Dept. EP, 89 Bickford St., Boston, Mass.**

When inquiring specify EP1507... see information request blank, pgs. 16-17



## NEW! A Real "Snap-Action" Trap for Draining Compressed Air Lines



CLOSED



OPEN

HERE'S what you've been looking for to give you dependable automatic drainage of water from compressed air separators, aftercoolers, tanks, lines, etc.

1. IMMUNITY TO ORDINARY DIRT TROUBLES. Pays for itself by reducing your maintenance expenses.

2. OPERATES WITHOUT AIR LOSS. Guards against excessive power costs.

3. SELF-PRIMING. Completely automatic.

4. LARGE CAPACITY. 1400 lbs. of water per hour at 125 lbs. pressure — 1000 at 250 lbs.

5. HIGH QUALITY CONSTRUCTION. Heat treated valve, stainless steel trim. We will mail interesting illustrated bulletin to you without obligation.

## ARMSTRONG MACHINE WORKS

800 Maple Street,  
Three Rivers, Mich.

When inquiring specify EP1508... see information request blank, pgs. 16-17

## Unbreakable Manometer

No Packing Glands or Rubber Gaskets Needed



Uses—Designed for rough use—portable or stationary, pressure or differential.

Features—No armor needed as tubes are made of unbreakable glass substitute. Not affected by water, glycerine, mercury or petroleum oils (alcohol should not be used). Pressure proof joints as tubes with standard pipe threads screw into metal attachments — no packing glands or rubber gaskets are necessary. Needle valves are at top and either side can be used for pressure or vacuum. On valve models, when valves are closed expensive mercury is retained for portable use. Special brush is available for cleaning tubes.

Description — Gauge will stand up to 100 lbs. pressure. Made in two styles with  $\frac{3}{8}$ " and  $\frac{1}{2}$ " unbreakable tubing—supplied with or without valves in ten sizes from 6" to 36". Gauges furnished with brass U-bends

unless cast iron is specified for gauges to be used with mercury. Connections designed to fit both pipe and hose. Drain cock is at bottom. Graduated scale etched in metal, zero adjustable. Cast aluminum back for rigid mounting of scale and tubes. Leather case provided for field use.

CONNELLY IRON SPONGE & GOVERNOR CO., Dept. EP, 3154 S. California Ave., Chicago, Ill.

When inquiring specify EP1509... see information request blank, pgs. 16-17

## Line of Thermometers, Hydrometers and Thermo-Hydrometers Illustrated and Described

Descriptions and illustrations of a wide line of thermometers, hydrometers and thermo-hydrometers features

this 24-page-plus-cover booklet. Lists and explains a variety of these instruments for a wide variety of uses. Booklet is done in color, attractively prepared and printed on stock giving excellent reproduction of illustrations. Available on request.

H-B INSTRUMENT CO., Dept. EP, 2303 N. Broad St., Philadelphia, Pa.

When inquiring specify EP1510... see information request blank, pgs. 16-17

## Have You A New Product?

If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in chemical and process manufacturing... send it to our Editors.

Through EQUIPMENT PREVIEW'S editorial pages they will introduce it to this great field... with more than 25,000 copies of this publication covering every plant. This service costs you nothing, and there is no obligation. Write—

The Editors, EQUIPMENT PREVIEW

737 N. Michigan Avenue

Chicago

Illinois

## Synthetic Belt Coating

Protects Belt Covers From Deterioration

Uses—For protection of conveyor belting, when in storage or idle for considerable period, from deterioration through effects of sunlight and air.

Performance—Large steel company, with extensive conveyor installations, had samples of conveyor belting with covers under severe tension coated with the new synthetic composition and exposed for six months to all varieties of weather. At the end of the period, none of samples on which belting coating had been applied showed any evidences of cover deterioration.

Description—New product has been designated as Goodrich R-60-T protective coating for conveyor belting.

B. F. GOODRICH CO., Dept. EP, Akron, Ohio.

When inquiring specify EP1511... see information request blank, pgs. 16-17

## Solvent-Resisting Air Hose For Hose Masks

Uses—Product developed for supplying air to men working in hose masks where the hose may be exposed to petroleum products or other liquid or vaporous rubber solvents.

Features—Has high resistance to penetration by organic vapors, thus providing a longer service life and economy for hose.



Performance—When air is pumped through 25-foot length of new hose when immersed in gasoline, in accordance with U. S. Bureau of Mines procedure, no gasoline vapors will be detected in this air for 36 hours, whereas gasoline will penetrate ordinary rubber hose within 16 hours, according to manufacturer. Permanently attached couplings provide connections between lengths of hose strong enough that the heaviest man can be lifted bodily out of a tank by the hose should fouling of his life line make it necessary.

DAVIS EMERGENCY EQUIPMENT CO., Dept. EP, 55 Van Dam St., New York, N. Y.

When inquiring specify EP1512... see information request blank, pgs. 16-17

# SPEEDY SMOOTH SAFE



it's THE  
3500 lb. cap.  
TRUCK

Here's the truck that operators dream about. It handles 3500 lb. loads with such unbelievable ease that after ordinary trucks, working with a Red Streak is like taking a vacation. That's because of the special compound lift mechanism. Safer too. Release check and safety hook sees to that. And with a roll as smooth as silk, it speeds production all along the line. Why not find out about one of industry's pets?

YALE



FREE TRIAL OFFER

THE YALE & TOWNE MFG. CO., PHILA., PA.

Gentlemen:

- ☐ Please send Red Streak for 15 day  
FREE TRIAL.  
☐ Please send free folder.

Name .....

Address .....

When inquiring specify EP1513... see information request blank, pgs. 16-17

## MORE POWERFUL!

Modern Signals for Modern Industry



## AIR WHISTLES

Wherever a more powerful signal is desired  
FEDERAL COMPRESSED AIR WHISTLES  
CAN SOLVE YOUR PROBLEM

- Fifteen models and tone ranges offered
- Available with manual or electric valves
- Pleasing powerful and penetrating vibrant tone
- Made of accurately machined bell bronze
- For interior or exterior signalling, as an alarm, start and dismissal, or code signal.

Write for catalog page 119 today

FEDERAL ELECTRIC CO., INC.  
8715 South State St. Chicago, Ill.

When inquiring specify EP1514... see information request blank, pgs. 16-17

## INDUSTRY ADOPTS THE BRASSETT Automatic STRAINER

• THE PAPER, Chemical, Steel, Automobile, Oil-Refining and many other industries, are using the Brassert Automatic Strainer because it insures a constant flow of strained liquid with no shut downs for cleaning.

The Brassert Automatic Strainer operates continuously, cleans itself and protects such equipment as spray nozzles, valves and pumps from abrasion. It is particularly efficient where the percentage of foreign matter in the fluids treated is high and the volume of liquid very large.

**THESE ADVANTAGES MEAN LOWER COSTS** The Brassert Automatic Strainer is self-contained on one base. It requires little space, and installation cost is low. Screening media consist of replaceable glazed porcelain or stainless steel discs—non-corrosive and easily back-washed, disc openings are from 1/16" to .003".

The Brassert Strainer requires but little power, practically no attention. Built in sizes to fit 2" to 30" line connections. May be installed in or out of doors. Bulletin EP gives complete engineering data and performance figures. Why not write for a copy?

**H. A. BRASSETT & COMPANY**  
ENGINEERS AND CONTRACTORS  
310 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

When inquiring specify EP1515... see information request blank, pgs. 16-17

## STOP LOOK

how Simple It Is  
with "DUSTUBES"

Dust-laden air passes into a settling compartment which drops the air velocity and distributes the air over the settling area. The air then flows upward, causing heavier dust particles to be thrown from the air stream. Fine particles float upward and are deposited on the inner surface of the tubes. Cleaned air passes through the tubes and into the clear air chamber, from which it is piped to the exhaust fan. Tubes are mechanically shaken periodically—accumulated dust being removed through the hopper valve.



## LISTEN TO THE FACTS ABOUT "DUSTUBE" DUST CONTROL BEFORE YOU BUY

A valuable and informative 24-page illustrated book on "Dustube" Dust Control is yours for the asking. Write today and ask for Book No. 22.

THE **American** FOUNDRY EQUIPMENT CO.  
575 S. BYRKIT ST. MISHAWAKA, IND.

When inquiring specify EP1516... see information request blank, pgs. 16-17

## NEW LITERATURE

The following literature has been issued recently by manufacturers of the products discussed and is available to process production executives on request. Address requests to the publishers by using handy request form, pages 16-17, or write to the manufacturers direct.

### Spun Heads for Pressure Vessels and Other Chemical Process Equipment . . . . New 132-Page Manual Gives Much Data

"Most comprehensive publication ever issued on the subject" . . . "Here, under one cover, designer or fabricator finds all major items of information essential to calculation of prices for forming spun heads."

Thus the manufacturer describes his new manual . . . and the book has much to support his claims.

The book . . . 132 pages of 7" x 10" print size . . . packs between its covers (1) 70 illustrations of usual and unusual uses of heads (2) Preface giving a 55-year history of machine-spinning (3) Essential data for flanged only heads, standard flanged and dished heads, etc., etc. . . . toed-in flanged heads, flanged only belled heads, etc. Detailed data lists head diameters from 12" to 216", gauges from 3/16" to 3" . . . etc. (4) Engineering data cover theoretical weights of steel plates in pounds per square feet, theoretical weights in pounds of circular steel plates, etc., etc.

The book is well bound, with heavy cover, for hard use. In view of the heavy cost of these manuals, the manufacturer asks those inquiring to do so on their company letter head or to identify themselves and their close interest in tanks, boilers, pressure vessels or other equipment involving the use of heads.

LUKENS STEEL CO., Room 87, Lukens Bldg., Coatesville, Pa.

When inquiring specify EP1517... see information request blank, pgs. 16-17

### Vibrating Conveyors and Feeders

Bulletin No. 29 offers clear-cut explanation of features of these vibrating conveyors and feeders. Schematic drawings illustrate operating features, supplemented by easy-to-read descriptions.

AJAX FLEXIBLE COUPLING CO., Dept. EP, 201 English St., Westfield, N. Y.

When inquiring specify EP1518... see information request blank, pgs. 16-17

### Sifter Catalog Shows Unusual Applications

#### . . . Other Data . . .

Illustrated and described in this 36 page booklet are the various models of this manufacturer's line of Gyro-Sifters. Diagrammatic drawings show details of the operation of the machines. Reference tables and other data on screen cloth are also given. Interesting installations of different types are illustrated and described. Available on request.

ROBINSON MFG. CO., Dept. EP, 720 Painter St., Muncy, Pa.

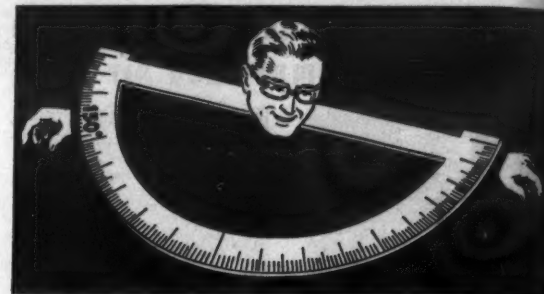
When inquiring specify EP1519... see information request blank, pgs. 16-17

### Motor, Lighting or Feeder Circuit Data

Sixty-four page "Quick Selector" catalog prepared to facilitate selection of correct apparatus for any motor, lighting, or feeder circuit. Safety switches, No-Fuze breakers, multibreakers, distribution panel boards, motors, and motor controls are featured in successive sections. Time-savings index is part of front cover. Four pages of general application data contain NEC recommended installation practices, simplified and tabulated for easy reference. Copies of Catalog 30-000 are available.

WESTINGHOUSE ELECTRIC & MFG. CO., Dept. S-N-48, East Pittsburgh, Pa.

When inquiring specify EP1520... see information request blank, pgs. 16-17



## 150° Effective Working Range

★ This wide working range of vision is of utmost importance to your men when working on hazardous operations. Means more production, fewer accidents and reduced man-production hour costs.



### The New Improved Cesco No. 220 WIDE VISION GOOGLE

A goggle that incorporates new scientifically developed features of construction. Check each and every one, and you will see why workmen are habitually inspired to wear them.

- Full 150° effective range of vision.
- Comfortable, moulded one-piece pads reduce and resist perspiration. Seat each eye snugly.
- Hardened safety lenses withstand covers in parts. Easy to replace.
- 66 ventilation holes increase cool air circulation.
- Nose-bridge adjustable to varying facial widths.

For Illustrated Circular and Full Details—Write

**CHICAGO EYE SHIELD CO.**

2337 Warren Boulevard  
Chicago - Illinois

When inquiring specify EP1521... see information request blank, pgs. 16-17

## Oxygen Breathing Unit One-Hour Supply—Back-Type Suspension



Uses — To provide respiratory protection in atmospheres containing concentrations of gases too high for safe use of canister type masks, or where oxygen content is below minimum necessary to support life.

**Features —** Lightweight—24 pounds. Can be used in prone and stooping positions where front-type is hampered. Reinforced aluminum cover protects working parts from damage. Contains a one-hour oxygen supply.

**Operation —** Lightweight steel cylinder contains oxygen at an

initial pressure of 135 atmospheres (1985 lbs. per sq. in.), which is retained in cylinder by special valve. Oxygen flows from cylinder to bellows and toggle type reducing valve which reduces pressure to approximately 5 lbs. per sq. in. From reducing valve, oxygen flows through tube inside cooler to seat of admission valve located inside breathing bag and mounted in side of cooler. Oxygen passes from bag into cooler, thence through inhalation breathing tube to lungs. Exhaled breath passes through exhalation breathing tube to regenerator, which contains granular chemical, "Cardoxide".

**Description —** Two models—mouthpiece type and full facepiece model. Safety valve installed in low pressure system is set to release when pressure exceeds 7 lbs., producing a whistle. By-pass tube permits oxygen to be admitted directly to cooler and thence to wearer, inde-



pendent of other working parts. Pressure gauge shows oxygen supply at all times. Series of check valves located in upper end of breathing tubes controls the direction of flow of oxygen and exhaled breath.

**MINE SAFETY APPLIANCES CO., Dept. EP, Braddock, Thomas & Meades Sis., Pittsburgh, Pa.**

When inquiring specify EP1522... see information request blank, pgs. 16-17

## Conveyor Design Assures Contamination Freedom

Driving Chain Moves in Separate Compartment.

**Features**—New design eliminates any metal contact in carrying run of conveyor, preventing possibility of dirt or lubricant from contaminating material — conveyed material being entirely free from contact with sprockets and chain, or chain and casing.



**Description** — Improvement, as shown in cut, is available in the manufacturer's "Horizontal Closed Circuit" type conveyor. New design does not add to overall width or length of conveyor because of the separate chain compartment—the addition in size of casing being made on inside of circuit. Equipment is available in either 90 or 180 degree type. In 90 degree type there are four corners, each curved at 90 deg. angle. 180 degree type has only two curved corners, each 180 deg. Other standard features of company's conveyors include enclosed and dust-tight construction, compactness, self-cleaning action, elimination of pits for elevating units, etc.

**STEPHENS-ADAMSON CO., Dept. EP, 11 Ridgeway, Aurora, Ill.**

When inquiring specify EP1523... see information request blank, pgs. 16-17

## DOWN GO PUMPING COSTS

This New Design Does it!

THREE SIZES:

5, 10

and 20

GPM

Pressures Up to 150 Pounds!



Today's BEST BUY in small pumps — these new BLACKMER Rotaries! They're LOW COST because

we did a swell job of design simplification — but no cut in quality.

SAVING NO. 1 — no expensive speed reducing gears required (direct drive).

SAVING NO. 2 — use of 1800 RPM standard motors drops motor costs to rock bottom.



DIRECT DRIVEN by 1800 RPM STANDARD MOTORS

If you have any small pumping problem, here's your answer with downright economy! Write for our Bulletin DC600 and NEW LOW PRICES.

**BLACKMER PUMP COMPANY**  
1734 CENTURY AVE., GRAND RAPIDS, MICH.

When inquiring specify EP1524... see information request blank, pgs. 16-17

## New Literature (Con.)

### Pressure Vessel Accessories . . . Data for Safety and Utility

The 40 pages of this booklet, just come from the press, give technical data as well as general information on accessories for pressure vessels . . . fired and unfired. Accessories include manhole cover assemblies, handhole cover assemblies, welded street ells, welded fittings, standard flanges, water column ells, welding necks . . . all illustrated, described.

Booklet stresses requirements essential to safety and utility. Done in color, with many pictures of products and installations and many diagrams illustrating features of products. Available on request . . . ask for Catalog No. 10.

**STEEL IMPROVEMENT & FORGE CO., Dept. EP, 960 Addison Road, Cleveland, O.**

When inquiring specify EP1525... see information request blank, pgs. 16-17

### "Fabricating Processes for 'Vinylite' Resins"

Detailed recommendations are given in this 20-page booklet on how to machine and fabricate "Vinylite" resins by common wood and metal working methods. Best methods for handling this material are given. One chapter tells of latest developments in fabricating these sheets by polishing, laminating, blowing, etc.; while another section is devoted to over-lacquers and wipe-on paints for molded articles and for sheets. Obtain booklet from

**CARBIDE & CHEMICALS CORP., Dept. EP, 30 East 42nd St., New York, N. Y.**

When inquiring specify EP1526... see information request blank, pgs. 16-17

### Oil and Gas Relief Valve

This complete catalog of 90 pages contains detailed pages of capacity tables, over-pressure factor curves and valve selection data of primary interest to the oil and gas industry. A dozen or more pages are devoted to steel pipe flanges and flanged fittings ASA B16e-1939. Specific features of these valves are outlined in detail. Consolidated Catalog No. 1600 is available upon request.

**MANNING, MAXWELL & MOORE, INC., Dept. EP, Bridgeport, Conn.**

When inquiring specify EP1527... see information request blank, pgs. 16-17

### "Metcolizing" for Metal Exposed to Heat

Eight-page, two-color booklet provides much information on this process of protecting metal to resist heat corrosion. Typical jobs are shown with explanatory material. One section lists metals and alloys which can be "Metcolized" as well as showing what equipment can use the process. Microstructure of specimen is shown after treatment under varying conditions. Bulletin P11 is available upon request.

**METALLIZING ENGINEERING CO., INC., Dept. EP, 21-07 41st Ave., Long Island City, N. Y.**

When inquiring specify EP1528... see information request blank, pgs. 16-17

### Technical and Scientific Books

1940 catalog of 40 pages and cover lists many new titles covering wide variety of subjects—analysis and testing, biology, applied chemistry, food, formulas and testing, metals and their treatment, paints-lacquers-dyes, etc.

**CHEMICAL PUBLISHING CO., Dept. EP, 148 Lafayette St., New York, N. Y.**

When inquiring specify EP1529... see information request blank, pgs. 16-17

### "Aerators"

An attractive, 12-page booklet discusses aeration and its purifying functions. Various types of aerators are described and illustrated in detail, including forced draft, coke tray, multicone, spray and cascade types. Useful information is given on the construction, operation and application of each different type. Bulletin No. 100 is available upon request.

**INTERNATIONAL FILTER CO., Dept. EP, 325 West 28th Place, Chicago, Ill.**

When inquiring specify EP1530... see information request blank, pgs. 16-17

For Offices

For Factories

New Low Cost

## ALLVENT FANS

FOR ALL VENTILATING PURPOSES

• Hushed operation suitable for office installation.

• Rugged construction to withstand industries' toughest jobs!

All ventilating problems solved quickly and economically with the new "tested and approved" Allvent Fan. Comes in many sizes to suit individual requirement. Compact and easy to install. Slower operating speeds provide QUIET operation!

**ALLVENT SPECIAL FEATURES**—"V" Belt Drive makes possible motor change if desired. Service and upkeep costs at a minimum! Adjustable motor pedestal; Large volumes of air delivered at low speed operation. *Certified Ratings* your guarantee of quality construction and operation!

Write for Bulletin No. 206, today!

### AUTOVENT FAN & BLOWER CO.

1805-7 N. Kostner Ave.,

Chicago, Ill.

When inquiring specify EP1531... see information request blank, pgs. 16-17

## Blaw-Knox GRATING

STANDS FOR

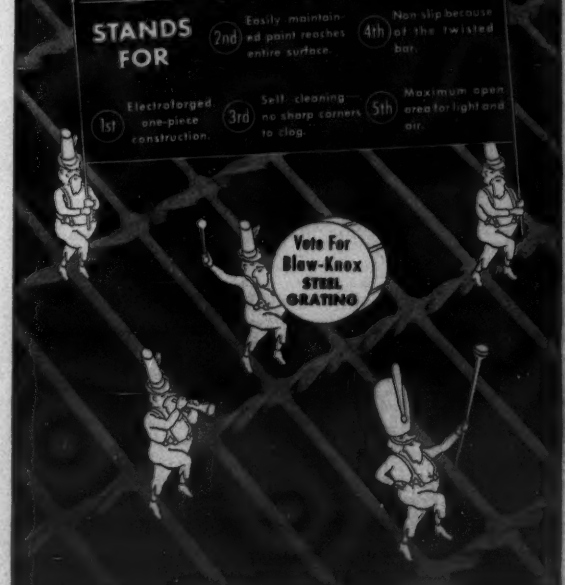
1st Easily maintained  
2nd Ed paint reaches  
entire surface

4th Non slip because  
of the twisted  
bar.

3rd Electroformed  
one-piece  
construction.

5th Self cleaning  
no sharp corners  
to clog.

Maximum open  
area for light and  
air.



Vote For  
Blaw-Knox  
STEEL  
GRATING

FREE

BLAW-KNOX DIVISION of Blaw-Knox Co.  
Farmers Bank Bldg., Pittsburgh, Pa.  
SEND GRATING SAMPLE TO

Paper weight size sample. Just fill in and mail the coupon.

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Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

When inquiring specify EP1532... see information request blank, pgs. 16-17

## What Is Your Paint Problem?



## SOLVE IT WITH VALDURA PAINTS

### VALDURA paint products

Enamels  
Wall paints  
Exterior paints  
Aluminum paints  
Asphalt paints  
Roof coatings  
Varnishes

FREE: Send for sample and literature.

For a quarter century our chemists have been producing practical solutions to tough paint problems.

This accumulated experience is represented in our standard finishes designed to withstand extreme heat, severe acid conditions, oils, brine, alkali, moisture, sharp temperature changes, sun, vibrations and smoke.

Our experimental department is at your service—free.

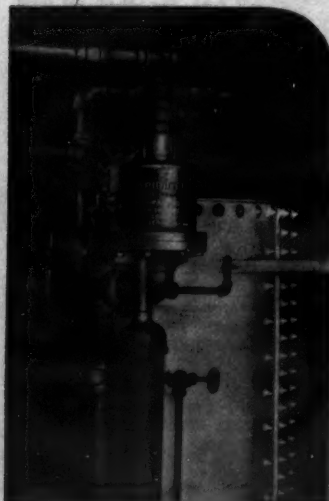
### SPECIAL PAINTS FOR SPECIAL PURPOSES

### VALDURA PAINT PRODUCTS

Manufactured by  
AMERICAN ASPHALT PAINT CO., 43 E. OHIO ST., CHICAGO, ILL.

When inquiring specify EP1533... see information request blank, pgs. 16-17

## Clean and Dry Your Compressed Air at Low Cost!



You can eliminate costly troubles arising from moisture, oil, dirt and fine scale in your compressed air and gas lines with an ARIDIFIER.

Low in installation and maintenance costs, this simple, fool-proof unit removes moisture, oil and other contamination, so destructive to air powered tools and equipment from compressed air lines in a continuous automatic operation.

Air borne solids and liquids, harmful to valves, pistons and other working parts, are impinged upon the vanes of rapidly rotating rotors propelled by the air with no appreciable back pressure and are removed by centrifugal force. No attention or servicing is required.

ARIDIFIERS quickly return their cost in lowered maintenance and replacement costs. Write today for Bulletin 939, guarantee, details of free trial offer and list of users in every industry.

### LOGAN ENGINEERING CO.

4900 Lawrence Ave., Chicago, Ill.

Offices in Principal Cities

**The ARIDIFIER**  
Dries and Cleans Compressed Air

When inquiring specify EP1534... see information request blank, pgs. 16-17

## New Literature (Con.)

### "Bearing Selection Tables" to Help Choose The Right Bearing

Featured in this 20-page new booklet... which is well done in color, with photographic illustrations... are the bearings selection tables which are simple and conveniently arranged to make it easy to select bearings from the complete line to meet any condition of service. The bulletin covers the Dodge-Timkin Double Interlock Pillow Block and gives complete information on it. Another feature of the bulletin is a color illustration of this bearing, with color "stereoscope type" eyepiece which brings out the bearing in third dimension. This Bulletin A-325 available to industrial executives on request.

DODGE MFG. CORP., Dept. EP, Mishawaka, Ind.

When inquiring specify EP1535... see information request blank, pgs. 16-17

### Portable Electric Tools

Maker's complete line of electric tools are illustrated and described in this 52-page catalog, covering hand saws, drills, hand and bench grinders, belt, disc and floor sanders, etc. Many photographs show tools applied to various jobs. Separate sheet for price list attached. Catalog 41 is available.

SKILSAW, INC., Dept. EP, 5033 Elston Ave., Chicago, Ill.

When inquiring specify EP1536... see information request blank, pgs. 16-17

### Engineering Data on Hoisting Equipment

Elaborate, 44-page, three-color catalog completely describes and illustrates this manufacturer's line of hoisting equipment. All specifications are included in detail with many tables to aid in selection of proper hoist for specific requirements. Types of hoists described include spur-gear, screw-gear and differential; information also covers capacities, lifts and speeds of maker's wire rope electric hoist. Catalog PD-25 is available upon request.

YALE & TOWNE MFG. CO., Dept. EP, 4530 Tacony, Philadelphia, Pa.

When inquiring specify EP1537... see information request blank, pgs. 16-17

### How to Select Proper Type and Size of Fluorescent Lighting Fixtures

20-page catalog, and cover, contains much practical and useful information on selection of fixtures for correct application. Interesting diagram charts show lighting intensities in foot-candles on the horizontal plane. One section supplies specific data on types of lamps, reflectors, and other details necessary when selecting the proper fixture for some six different groups of lighting conditions and applications. Catalog K is available upon request.

HOLDENLINE CO., Dept. EP, 2341 Carnegie Ave., Cleveland, O.

When inquiring specify EP1538... see information request blank, pgs. 16-17

### Propeller-type Fans and Blowers

32-page, and cover, catalog illustrates and describes this entire line of propeller-type fans and blowers. Complete air-delivery tables are given for each type. Many new sizes and models of these units have been included, particularly those models of fans and blowers where the motor is completely out of the air-stream. Catalog No. 12 is available upon request.

HARTZELL PROPELLER FAN CO., Dept. EP, Piqua, Ohio.

When inquiring specify EP1539... see information request blank, pgs. 16-17

### Surface Condenser, Cross Flow Type

This 8-page folder describes these surface condensers for high vacuums and high efficiency in small capacities. Typical installations are shown with cross-sectional views giving structural details and operating features. This three-color bulletin, Form 2622, is available upon request.

INGERSOLL-RAND CO., Dept. EP, Phillipsburg, N. J.

When inquiring specify EP1540... see information request blank, pgs. 16-17



## CAST MONEL NICKEL, AND INCONEL FITTINGS

### AVAILABLE FROM STOCK



Cast Monel and nickel fittings are really tough and strong—over twice as strong as yellow brass, and much tougher. They resist abrasion and erosion; their high resistance to corrosion protects the purity of products handled in them. They are solid in structure, remaining pressure tight under varying conditions of temperature, pressure, and vacuum. All I.P.S. and standard fittings available from stock. Write today for price schedule.

THE INTERNATIONAL NICKEL COMPANY, INC.  
67 WALL STREET NEW YORK, N. Y.

When inquiring specify EP1541... see information request blank, pgs. 16-17

## Laboratory Mixer

Thumb Screw Turn Increases Speed Up to Max. 1750 R.P.M., or Decreases Speed Until Mixer Barely Turns Over



Uses—Used in laboratory for making up standard solutions, stirring constant temperature batch, making up test batches, etc. Can be used for small production lots of cosmetics, fine chemicals, pharmaceuticals, etc. Totally enclosed motor permits use with inflammable materials.

Features — Mixer has adjustable speed friction drive. Provides constant horsepower at propeller and increasing torque with

slow speeds. Turn of convenient thumb screw increases speed up to maximum of 1750 R.P.M., or decreases speed until mixer is barely turning over. Unit has no gears to wear out and needs no rheostat — there is no commutator or switch. Unit is easily portable.

Performance—Mounted on special ring stand clamp, mixer may be used on beakers as small as 300 c.c. without spilling or "throwing out" contents. Units have been used on tanks up to 20 gallons to produce gentle agitation. Mixer is useful over full range of viscosities. In suitable quantities, material up to 300 centipoises may be



agitated continuously without overloading motors. Thicker materials may be handled by reducing speed slightly with speed control. Model "F" gives medium agitation equivalent to hand spatula stirring in thin liquids up to five gals., medium thick up to two gals., and heavy liquids in one to two quart quantities.

**Description**—Available in 110 to 220 volt, 60 cycle, one phase current. Model "F" weighs ten pounds. Totally enclosed, 1/30 H.P. motor, shaded pole type with fan cooled housing. Shaft propeller is 18-8 or Monel, 12" long, 5/16" dia., and 4 1/2" shaft length adjustment. Propeller is 3-blade style, 2" size. Interchangeable accessories are available. Catalog B-67 gives all details.

**MIXING EQUIPMENT CO., INC., Dept. EP, 1085 Garson Ave., Rochester, N. Y.**

When inquiring specify EP1542... see information request blank, pgs. 16-17

## Compressed Air Horn

Use Less Air in Providing Powerful Signals

**Uses**—When powerful signal is desired, and supply of compressed air is available, these compressed air horns (or whistles) will provide short, sharp code blasts or prolonged alarms. For all types of industrial use.

**Features**—Operating on principle of diaphragm vibration, horns use less air to produce equal sound of conventional whistles.

**Description**—Volume and tone depend on size, 15 sizes being available. Suitable valves are also offered for manual or electric control. Horns are constructed of special cast bell bronze accurately machined to provide maximum resonance. Catalog Page 119 contains detailed specifications.

**FEDERAL ELECTRIC CO., INC., Dept. EP, 8715 South State St., Chicago, Ill.**

When inquiring specify EP1543... see information request blank, pgs. 16-17



Here's the most powerful



**MAGNETIC PULLEY on the MARKET—Size for Size!—**  
FOR REMOVING IRON FROM ANY MATERIALS  
CARRIED ON A BELT CONVEYOR

**AIR-COOLED!**—This pulley has twice the heat radiating surface of any similar unit—corrugated radial openings, longitudinal openings, impeller hub design. Heat destroys magnetic pulling power—that's why Dings runs 'em cooler!

**Bronze Spacers and Coil Covers!**—The only pulley using bronze instead of steel for these parts. Steel short-circuits lines of force, reduces magnetic pull.

When you buy a magnetic separator, you are buying magnetic pulling power—the Dings pulley gives you the greatest pulling power. Why have anything less? Write to Dings for details today.

**Free Magnetic Analysis:** Send a sample of your material to Dings for iron-removal recommendations today.

**Dings**  
MAGNETIC SEPARATION

**DINGS MAGNETIC SEPARATOR CO. 675 SMITH STREET MILWAUKEE, WIS.**

When inquiring specify EP1544... see information request blank, pgs. 16-17

## New Literature (Con.)

### Slide Rule Chart for Valve Selection

Novel slide chart permits engineers to instantly ascertain figure number of valve in any available size for any pressure. Simple manipulation locates and clarifies information, and saves leafing through elaborate catalog. Various tables are made up and remade by sliding card back and forth under window openings in slide holder. Chart includes useful information on semi-steel, steel and malleable iron valves. Copies of "Figure Number" Chart Form V-130 obtainable upon request.

**MERCO NORDSTROM VALVE CO., Dept. EP, 400 Lexington Ave., Pittsburgh, Pa.**

When inquiring specify EP1545... see information request blank, pgs. 16-17

### Industrial Ovens and Dryers

Over 100 application pictures, with descriptive material, make up this handsome, 32-page booklet. Shown in detail are conveyor ovens; hand, car, truck and skid rail loading ovens; dryers for low temperatures; and many other types for complete industrial drying, baking, heat treating and curing uses. First section of booklet is general discussion of various heating systems. Catalog No. 107 is available upon request.

**THE GEHRICH CORP., Dept. EP, Skillman Ave. & 35th St., Long Island City, N. Y.**

When inquiring specify EP1546... see information request blank, pgs. 16-17

### How Filters Improve Plating

This 8-page bulletin discusses the application of filters in plating industries; "Why Filter?", "How to Filter?" and similar questions being asked and answered. It also illustrates and describes plate and frame filter presses... and their diaphragm pump for use with the filters. Bulletin is well illustrated and done in two colors. Available on request... ask for "Better Filtration Means Better Plating."

**T. SHRIVER & CO., Dept. EP, 810 Hamilton Street, Harrison, N.J.**

When inquiring specify EP1547... see information request blank, pgs. 16-17

### "Proper Care of Safety Goggles"

An attractive well-illustrated bulletin describes set of simple rules for care and maintenance of safety goggles, the use of which is offered to reduce goggle replacement and upkeep costs. Featured are proper methods of sterilizing goggles to avoid face and eye infection; also, instructions for goggle adjustment to avoid discomfort and "loopholes" for injuries. Available upon request.

**AMERICAN OPTICAL CO., Dept. EP, Southbridge, Mass.**

When inquiring specify EP1548... see information request blank, pgs. 16-17

### Handbook of Spray Painting Equipment

A well-indexed booklet of 32 pages describes in detail, with functions explained, many types of spray painting equipment. Five sections cover: paint spray gun, its troubles, remedies and accessories; material containers; hose and hose connections; air transformers and condensers; and air compressing outfits. Material is presented in the "question and answer" form, with many clarifying illustrations and diagrams. Handbook available upon request.

**THE DEVILBLISS CO., Dept. EP, Toledo, Ohio.**

When inquiring specify EP1549... see information request blank, pgs. 16-17

### Large Four-Cylinder Compressors

16-page booklet and special cover, entitled "Ice and Frost", is media for detailed description of these large compressors. Many installation pictures are included as well as special views of main operating features. Center spread is large schematic drawing showing over 20 details with supplementary explanation. Principal dimensions and specifications are given in another section. Bulletin No. 651-A is available upon request.

**FRICK CO., Dept. EP, Waynesboro, Pa.**

When inquiring specify EP1550... see information request blank, pgs. 16-17

## Better Washing Facilities Said to Reduce Skin Affections and Lost Hours

Dr. Stuart F. Meek, in a recently published comment on Hygiene and Control of Dermatitis stresses "adequate washing facilities" and the article illustrates "a scientific well-built washing fountain to make it easy for workmen to keep clean."

(Hazards and Safety, September, 1939).



The illustration above shows the type of Wash-fountain referred to, having a central sprayhead to provide clean, running water to one or 10 persons simultaneously—and with a deep self-draining bowl so that water does not collect to cause contamination. The wash fixtures shown are made by the **BRADLEY WASHFOUNTAIN CO., 2257 W. Michigan St., Milwaukee, Wisconsin**, and suggestions for washroom planning are included in booklet, "Washroom Layouts," available to those interested.

When inquiring specify EP1551... see information request blank, pgs. 16-17

What a Racket in this Place!  
No wonder I can't hear you



Don't blame the phone! It's easy to hear in the noisiest places if you use a Burgess Acousti-Booth. This remarkable doorless booth has a patented sound-absorbent lining that soaks up shop racket. Since there are no doors, glass, or fan, there is no maintenance problem. It is easy to use and always clean and well ventilated. Used in hundreds of plants. Improve your phone service by installing a Burgess Acousti-Booth in every noisy department. Send coupon for details of this amazing booth.

Patented

This Acousti-Booth Soaks Up Noise  
Mail Coupon for Free Booklet

Please send FREE illustrated booklet describing the Burgess Doorless Acousti-Booth and how it makes telephoning easy. Include list of nearest users. Mark booklet and list for the attention of:

Name.....

Firm Name.....

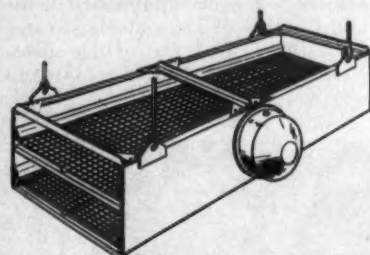
Street—City.....

Burgess Battery Company, Dept. EP, 500 W. Huron St., Chicago

**BURGESS ACOUSTI-BOOTH**  
Operating under Burgess Patents

When inquiring specify EP1552... see information request blank, pgs. 16-17

## This New GYROSET VIBRATING SCREEN



• POSITIVE  
STROKE  
ADJUSTMENTS

• FULL  
FLOATING  
SHAFT

• OIL  
LUBRICATION

### Positive Action Through Eccentric Balance Wheels

... will definitely control your product because (a) action is positive through eccentric balance wheels (not offset weight) and (b) vibration amplitude or intensity is adjustable and positive. Whether you have a feed of 10 lbs. or 300 lbs., the action is uniform and constant.

Grades or sizes fine powders, chemicals, gravel, coal, ore, etc., etc. — either wet or dry. Screen cloths changed quickly and easily. Manufactured in 1, 2 and 3 decks ... mounted to suit requirements.

Adjustments easily, quickly made ... no special tools or skill required. Whatever your problem, write for

New Gyroset Bulletin ... Free

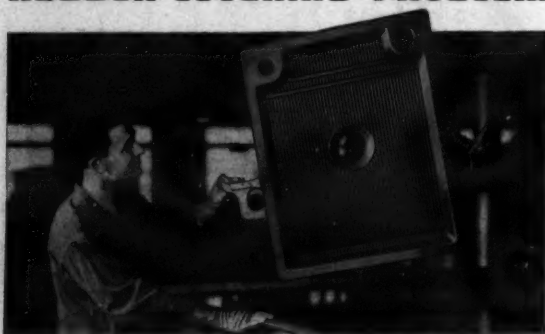
**PRODUCTIVE EQUIPMENT CO.**

2926 W. LAKE STREET

CHICAGO, ILL.

When inquiring specify EP1553 ... see information request blank, pgs. 16-17

## ANODE SOLVES ANOTHER RUBBER-COVERING PROBLEM



● To completely cover cast iron filter plates with soft rubber, which possessed the proper adhesion, was the problem facing a certain manufacturer. Plates were then submitted to Miller for rubber covering by the Anode process. Result—an even thickness of soft rubber applied over the entire surface (including the almost inaccessible outlets) with perfect adhesion.

The Anode process permits the covering of irregular shaped metal parts with a uniform thickness of soft, semi-hard or hard rubber which offers, in addition to improved adhesion, greater tensile strength and age resistance. For complete information, write—

MILLER RUBBER COMPANY, INC. • AKRON, OHIO

"Engineers in Rubber"

When inquiring specify EP1554 ... see information request blank, pgs. 16-17

## New Literature (Con.)

### Equipment and Plant Repair Handbook

Forty-page manual, pocket-size, has 170 diagrams showing methods of sealing cracks in shells of evaporators, condensers, heaters and other process equipment; stopping leaks at tank seams and pipe joints; tightening loose bolts, nuts and metal parts and fixtures; waterproofing concrete or brick walls and floors; and many other emergency and routine repair and maintenance jobs. Diagrams show details of many uses and where material should be applied. Handbook is available upon request. SMOOTH-ON MFG. CO., Dept. EP, 570 Communipaw Ave., Jersey City, N. J.

When inquiring specify EP1555 ... see information request blank, pgs. 16-17

### "Monel, Nickel and Inconel in Soap and Related Products Industries"

Sixteen-page bulletin discusses technical applications of various alloys for use in soap and related products industries. Covers such subjects as soap boiling, treating spent soap pickle, salt recovery, fat splitting, sulfonation, half boiled and cold processed soaps, etc. Various utensils, shipping drums and accessories are described. Tables show various corrosion rates for different metals in specific applications. Contains many pertinent photos. Bulletin C-1 is available.

INTERNATIONAL NICKEL CO., Dept. EP, 67 Wall Street, New York, N. Y.

When inquiring specify EP1556 ... see information request blank, pgs. 16-17

### "Safe Handling of Acids and Chemicals"

Four-page, illustrated folder describes specialized group of accident prevention equipment for workers engaged in handling acids, chemicals or caustics. Equipment includes such items as respirators, hoods, goggles, carboy truck and tilter, carboy siphon, gloves, aprons, skin creams, sleeves, acidproof pails and dippers. Folder is available upon request.

PULMOSAN SAFETY EQUIPMENT CO., Dept. EP, Johnson and Prince Sts., Brooklyn, N. Y.

When inquiring specify EP1557 ... see information request blank, pgs. 16-17

### Revised H.P. Ratings for "Texrope" Drives

Catalog No. 151, 34 pages, is packed with charts, diagrams and engineering data introducing new horsepower ratings for multiple V-belt drives based on new formula developed by Robert F. Vogt and recently adopted by the industry. Information supplied on selection of size of belt for horsepower rating, speed, center distances and sheave diameters.

ALLIS-CHALMERS MFG. CO., Dept. EP, Milwaukee, Wis.

When inquiring specify EP1558 ... see information request blank, pgs. 16-17

### High Pressure Autoclaves

Although booklet is mainly descriptive of manufacturer's laboratory autoclave, these units are designed and built up to 2,000 gallon capacity. One section shows with photographs the complete opening and closing cycle, at 10,000 lbs. per sq. in., requiring only 25 minutes. Table of standard sizes is given with specifications. Booklet is available upon request.

STRUTHERS-WELLS, Dept. EP, Titusville, Pa.

When inquiring specify EP1559 ... see information request blank, pgs. 16-17

### Mixers for Usual Jobs . . . and for Unusual Requirements

The consolidated line of Gardner and Unique Mixers and Sifters is presented in its entirety in this new 60 page booklet ... large, descriptive photographs give excellent illustration and detailed description of all models together with specifications, etc., give full information. A wide variety of designs, applications and unusual installations are featured. Available on request.

ROBINSON MFG. CO., Dept. EP, 726 Painter St., Muncy, Pa.

When inquiring specify EP1560 ... see information request blank, pgs. 16-17

## ANOTHER DIFFICULT MIXING JOB SOLVED BY MULLING in the SIMPSON INTENSIVE MIXER



One of 3 No. 2 — 5' Dia. Pan Simpson Mixers, at Nat'l Aluminate Corp., Chicago, properly blending water treating chemicals, with a wide variety of formulas.

BUILT IN 10 SIZES INCLUDING LABORATORY SIZE.

## MORE THAN 3500 INSTALLATIONS ON OVER 50 DIFFERENT CLASSES OF MATERIAL

Higher production, lower power and maintenance, greater uniformity and higher quality of product are some of the advantages of "the mulling process of mixing." The rubbing, kneading and smearing action of heavy, wide-faced mullers in the Simpson Mixer, without grinding, afford rapid, thorough distribution thru the batch.

INVESTIGATE NOW — DATA OR REPRESENTATIVE — NO OBLIGATION.

## NATIONAL ENGINEERING COMPANY

Department EP 540 W. Washington Blvd. Chicago, Ill., U.S.A.

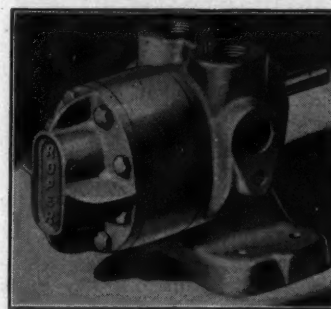
Representatives in all sections of U. S. and foreign countries.

When inquiring specify EP1561 ... see information request blank, pgs. 16-17

To secure EQUIPMENT PREVIEW for your key men, turn to 'request slip' ... pages 16 and 17.

## Rotary Pumps with "Hydraulic Balance"

Only 2 Moving Parts—Equal Size Pumping Gears



Uses — Will handle any clean liquid free from abrasives, present models up to 1000 g.p.m. capacities at speeds up to 1800 r.p.m. and against pressures up to 1000 lbs. per sq. in.

Features — Perfect "hydraulic balance" is claimed by the manufacturer to greatly reduce wear

of gears and housing and to increase pumping efficiency. This feature permits removal of gears and bearings for inspection without disturbing piping or coupling, as gears "float" in operation. It equalizes internal pressure at all points and absorbs all shock or thrust from power end of drive shaft. Flanged high lead bronze bearings are now available in two pump series, these bearings acting as wear-plates while absorbing all wear usually placed on face and backplate. Eight different piping arrangements.

Description—Twenty-one different drives and mountings are available, ranging from ordinary foot, hub and flange mounting heads to complete bedplate units for direct motor drive; gear reduction; flat or V-belt drive. Units include various sizes from 1 to 1000 g.p.m. capacity. They will operate in either direction. Self-lubrication maintained by liquid flow through pump. Pumps include



choice of spiral, spur or herringbone gears; conventional packing box, spring loaded packing box or mechanical seal; sleeve or roller bearings; built in or external relief valve. Catalog 939 gives selection chart with specifications.

GEO. D. ROPER CORP., Dept. EP, 300 Blackhawk Park Ave., Rockford, Ill.

When inquiring specify EP1562...see information request blank, pgs. 16-17

## Acid & Oil-Proof Aprons

### All-Purpose Apron for General Protection

**Uses** — For protection while working with oils and greases, tar, acids, chemicals, paints, varnishes and lacquers, solvents, creosote, gasoline and kerosene, naphtha, cutting oils, etc.

**Description** — Aprons are made from two materials — canvas and leather. Canvas aprons are light weight and wear well — used for lighter work. Heavier and sturdier leather is used for rougher use. Both types of materials come in the regular apron style or, as shown in illustration, the split-leg type. Sizes vary from 24" x 30" to 24" x 54" in leather and from 29" x 30" to 29" x 54" in the canvas. Smallest canvas apron sells for \$2.00 each and the largest leather apron for \$6.00, with variations for size and materials between those prices. Discounts are offered for larger lots than single orders. Leather strings are used for fastening to body.

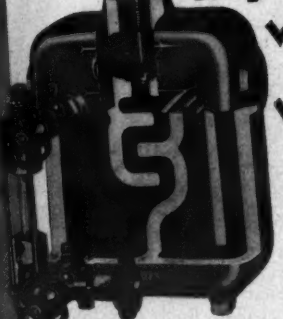
SAFETY EQUIPMENT SERVICE CO., Dept. EP, 1228 St. Clair Ave., Cleveland, Ohio.

When inquiring specify EP1563...see information request blank, pgs. 16-17



## CHECK THESE FEATURES

✓ in the light of your steam trap experience



✓ NO MOVING PARTS —  
no mechanism to fail —  
no annual maintenance

✓ REMOVES AIR and CONDENSATE CONTINUOUSLY —  
maintaining peak efficiency of steam using devices

✓ FLOW ACTUATED and CONTROLLED by a NATURAL LAW

✓ SAFETY GAUGE GLASS FITTING —  
contains automatic shut-off and blow-down valve.

✓ OPERATION VISIBLE in a gauge glass

THE ADVANCED STEAM TRAP with NO MOVING PARTS  
Write for literature

THE COE MFG. CO.  
490 Bank Street  
Palmyra, Ohio

When inquiring specify EP1564...see information request blank, pgs. 16-17

## New Literature (Con.)

### "200 Revolutions Mixes Your Batch . . ."

So says a new leaflet dealing with a conical dry blender. . . which briefly stresses the features of this equipment and lists some prominent users . . . also tells why and how it is possible to mix your batch with these 200 revolutions and discharge the batch in 10 to 20 minutes. Ask for leaflet, "200 Revolutions."

PATTERSON FOUNDRY & MACHINE CO., Dept. EP, East Liverpool, O.

When inquiring specify EP1565...see information request blank, pgs. 16-17

### "Everything For Safety"

Comprehensive catalog of 136 pages and cover includes hundreds of items on safety equipment of all types. Large number of illustrations plus informative descriptions make this catalog a practical guide to equipment for accident prevention. The book is well indexed for easier, speedier use. Catalog No. 40 is available upon request.

BOYER-CAMPBELL CO., Dept. EP, 6540 Antoine St., Detroit, Michigan.

When inquiring specify EP1566...see information request blank, pgs. 16-17

### All-Electric Vibrating Units

Three-color folder is made up of some 30 installation photos showing electric vibrating units for control in feeding, weighing, conveying, drying, cooling, packing and screening operations. Many different types of material are shown in photographs. Bulletin 727 is available upon request.

JEFFERY MFG. CO., Dept. EP, Columbus, Ohio.

When inquiring specify EP1567...see information request blank, pgs. 16-17

### Odor Control Devices

A much needed catalog has been published on the subject of devices for controlling odors in air conditioning and ventilation. Many types of equipment are described and illustrated in detail for the control of odors ranging from food to sewage. Booklet is available upon request.

W. B. CONNOR ENGINEERING CORP., Dept. EP, 114 E. 32nd St., New York, N. Y.

When inquiring specify EP1568...see information request blank, pgs. 16-17

### Induction Motor—2 and 3-Phase A-C Circuit

An informative, 4-page bulletin describes these motors in detail. Good close-up photos show operations in bringing motors to the finished state. Major steps are carefully described and illustrated to make an effective presentation. General specifications are shown. Bulletin 118 is available.

RELANCE ELECTRIC & ENGINEERING CO., Dept. EP, 1062 Ivanhoe Road, Cleveland, Ohio.

When inquiring specify EP1569...see information request blank, pgs. 16-17

### Cements and Plastics for Refractory Use

Bonding materials, high temperature cement, fire clays, clay mixtures, silica cement, furnace patch and hearth plastic are all covered in detail in this attractive 12-page booklet. Various products' uses are indicated together with general characteristics, temperatures of use, shipping containers, etc. Bulletin No. 102 is available upon request.

NORTH AMERICAN REFRACTORIES CO., Dept. EP, Cleveland, Ohio.

When inquiring specify EP1570...see information request blank, pgs. 16-17

### Steam Jacketed Kettles

Two-color folder gives highlights of this maker's steam jacketed, spherical bottom kettles. Specifications are given for kettles from 20 to 200 gals. capacity and on three series of 40, 90 or 125 lbs. jacket working pressure. Line drawing shows operating features.

EDGE MOORE IRON WORKS, Dept. EP, 30 Rockefeller Plaza, New York, N. Y.

When inquiring specify EP1571...see information request blank, pgs. 16-17



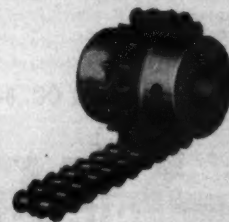
## Write for This Flexible Coupling Catalog

All the features of these double strand roller chain Couplings are explained — the greater horse power capacity per given outside diameter, — the greater bearing areas, freedom of movement, — ease of installation and disassembly . . . If you have need for flexible couplings write today for Catalog C-12 . . . DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis, Ind. Offices and Distributors in Principal Cities.

### DIAMOND FLEXIBLE COUPLINGS

The Original Roller Chain Couplings

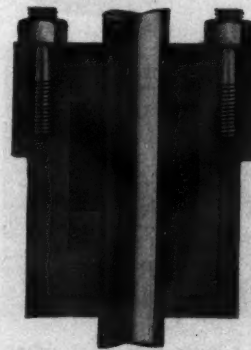
When inquiring specify EP1572...see information request blank, pgs. 16-17



## GOODALL "LONG LIFE" PACKINGS

Completely Automatic!

FOR CLOSER SEALING,  
LESS WEAR AND TEAR,  
AND GREATER ECONOMY  
ALL AROUND



Channels between rings serve as lubricant reservoirs. Lips expand as pressure rises, increasing sealing action. On back stroke, lip expansion is reduced, permitting free operation of rod or plunger without leaking. Made in five different compositions, each for a specific service.

SEND NOW for your free "PACKING DATA CHARTS" containing complete tables on pressures, depths of stuffing boxes, and dimensions of packings.

## GOODALL RUBBER COMPANY

INCORPORATED

3 SOUTH 36TH STREET, PHILADELPHIA, PA.

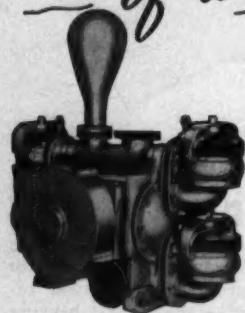
Branches and Distributors from Coast to Coast

MILLS: TRENTON, N. J., U. S. A. EST. 1873



When inquiring specify EP1573...see information request blank, pgs. 16-17

## What a "Whale" of a Pump for



**SLURRIES • SLUDGES  
ACIDS • CORROSIVES  
ABRASIVES • GUMS  
PASTES • PLASTICS**

Double positive acting, no packings, no leakage, uncontaminated by material, easy to clean—add these up and you get the pump for "tough" materials at the lowest operating and maintenance cost. That's the Shriver Diaphragm Pump for any difficult job of handling thick suspensions, viscous fluids, corrosive or abrasive process materials, which quickly ruin other types of pumps. Made of any metal or rubber covered; pressures up to 100 lbs. per square inch; standard sizes from 1 to 100 G.P.M. also larger sizes; any type of drive.

Learn what users think of it; get Bulletin No. 106.

**T. SHRIVER & CO. 846 Hamilton St., Harrison, N. J.**

# Shriver

## DIAPHRAGM PUMPS

When inquiring specify EP1574... see information request blank, pgs. 16-17

## HACKNEY STRAIGHT SIDE DRUM —WITH REMOVABLE HEAD

is particularly advantageous for shipping products which are likely to congeal or solidify in the container.

The upper rim of this Hackney drum is curled outwardly, making a smooth opening without inward projections. The new, special Hackney welded chime construction provides a smooth surface which may be easily and surely cleaned. There are no cracks or crevices where foreign matter can lodge.

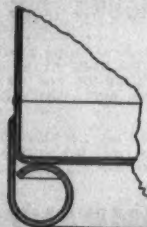
A heavy crescent-shaped steel hoop, tightened by a single bolt on the patented Hackney Toggle-tite closure, holds the head in place. There is no chance of leakage either in or out.



Regularly made in 55 gallon capacities of 16-gauge or 14-gauge metal. Furnished black, galvanized or stoned.

Pressed Steel Tank Company have been furnishing containers to the chemical and process industries for over 35 years — for practically every type of gas, liquid or solid. Let a Hackney engineer help you determine the most practical and economical container for your needs — write today — no obligation.

The special Hackney butt-welded bottom chime construction is exceptionally strong and durable. Being without recesses it enables easy, positive cleaning.



## PRESSED STEEL TANK COMPANY

1399 Vanderbilt Concourse Bldg., N. Y. • 1495 So. 66th St., Milwaukee  
208 S. LaSalle St., Rm. 1899, Chicago • 699 Roosevelt Bldg., Los Angeles

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

When inquiring specify EP1575... see information request blank, pgs. 16-17

## New Literature (Con.)

### How To Select Motorized Speed Reducers

Handsome 28-page, and cover, catalog provides engineering data for proper selection of motorized speed reducers with table as guide in determining load and service factors. Other selection tables show proper unit to use under specific service factors. Detailed drawings and application pictures show various models available and in use. Separate price list and specification tables accompany the catalog. Catalog No. 17 is available upon request.

D. O. JAMES MFG. CO., Dept. EP, 1120 West Monroe St., Chicago, Ill.

When inquiring specify EP1576... see information request blank, pgs. 16-17

### Spray Nozzles and Accessories

Complete line of spray nozzles and their accessories are shown in this catalog. Detailed specifications are given for each type supplemented by many line drawings. One section shows applications for a dozen or more uses including humidifying, descaling, gas washing, roof cooling, hog and beef cooling, gravel washing, etc. Catalog No. 20 is available upon request. Additional literature is available covering engineering service for special problems in spraying nozzles.

SPRAYING SYSTEMS CO., Dept. EP, 4621-27 West Lake St., Chicago, Ill.

When inquiring specify EP1577... see information request blank, pgs. 16-17

### Catalyzers for Internal Boiler Water Use

This 16-page booklet, done in two colors, thoroughly explains this manufacturer's boiler water control system. Explained are typical survey of boiler with sample survey form, list of users, boiler problems and equipment for proper testing, field service and boiler records of operation, and trial agreement form. Booklet is available.

ELECTRIC CHEMICAL CO., Dept. EP, Cleveland, Ohio.

When inquiring specify EP1578... see information request blank, pgs. 16-17

### Deep Well Automatic Water System

Concise written, this two-color bulletin indicates by large cut-away photo and descriptive material the major features of the "Auto-Jet," centrifugal type, deep well pumps. Major uses are shown and a separate sheet gives various combinations for proper selection of equipment, table of performance for various models and a price list. Bulletin 260-B15 and Form L15 are available upon request.

ROOTS-CONNERSVILLE BLOWER CORP., Dept. EP, Connersville, Indiana.

When inquiring specify EP1579... see information request blank, pgs. 16-17

### How to Select Arc Welding Electrodes

Twenty-four page booklet, attractively handled in two colors, is a guide for quick, sure selection of proper electrodes for all classifications of welding work. Booklet reviews general description, application, procedure for use and physical properties of maker's electrodes. Final section is devoted to "Welding Symbols and Instructions for Their Use," as published by American Welding Society. Copies of booklet, No. ADW-18 are available.

WILSON WELDER & METALS CO., INC., Dept. EP, 60 East 42nd St., New York, N. Y.

When inquiring specify EP1580... see information request blank, pgs. 16-17

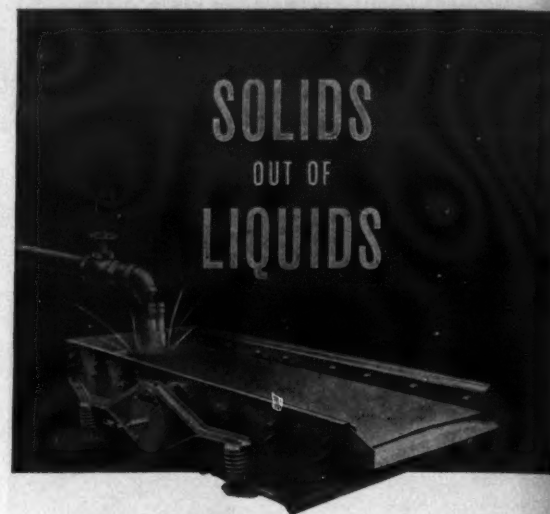
### Steam Traps—Thermostatic, Expansion, Etc.

20-page, two-color booklet describes thermostatic, expansion, weight operated and piston operated steam traps. Lists of recommended uses, piping diagrams, typical applications and other useful data are given in tables, charts, cut-away drawings and photos, etc. Catalog No. 240 is available upon request.

W. H. NICHOLSON & CO., Dept. EP, 12 Oregon St., Wilkes Barre, Pa.

When inquiring specify EP1581... see information request blank, pgs. 16-17

# SOLIDS OUT OF LIQUIDS



Robins Liquid Screens offer a continuous and most economical means of separating solids from liquids. Send for the new bulletin No. 107 "Liquid Screens."

# ROBINS

**ROBINS CONVEYING BELT COMPANY**  
PASSAIC, NEW JERSEY

Offices in Principal Cities

When inquiring specify EP1582... see information request blank, pgs. 16-17

## Multiple Hole Piercer All Holes In 1 Operation—Low Set-Up Cost

**Uses** — For punching holes in paper, bakelite, or similar tubes; also in small zinc or aluminum cans and shields. For round, square, rectangular or poly-sided pieces.

**Features** — All holes are punched in one operation. After trivial initial tooling is completed, change-over from one job to another can be accomplished in a set-up time of from 5 minutes to ½ hour. Operator requires no previous experience and maker claims rate schedules are easily met after one hour of practice. Fool-proof, safe operation. Initial tooling for average piece is approximately equivalent to cost of a drill jig.

**Operation**—Twelve eccentric shafts, gear actuated, are equally spaced around a circle. Each spindle is covered with free steel sleeve. Die, or punching jig, complete with stripper plate is mounted at center in bushing. Bushing is oscillated to match motion of eccentric shafts. Piercing punches are mounted in standard punch holders, which are secured by locking arrangement to steel sleeve. Conventional clutch, fly wheel and tripping device is used. On one model, a compressed air valve and air hose connection is provided for automatic slug ejection.

**Description**—Each machine is equipped with five-numeral counter. Will punch any shape hole for which it is practical to make a punch. Any number of holes within machine capacity may be punched simultaneously, depend-





ing upon kind of material, size of holes, etc. Type 1001 will normally accommodate tubes, or their equivalent, from  $\frac{3}{4}$ " to 3" I.D. and up to 5" long. Type 1002, tubes from 1" to 8" I.D. and up to 10" long. Type 1001 uses  $\frac{1}{4}$  h.p., single phase 60 cycle, 120 volt motor. Type 1002 requires 1 h.p., three phase, 60 cycle, 220/440 volts.

**AUTOMATIC WINDING CO., INC.,** Dept. EP, 900 Passaic Ave., East Newark, N. J.

When inquiring specify EP1583... see information request blank, pgs. 16-17

## Steel Refuse Kettles

### Self-Cleaning When Kettle Is Dumped

**Uses**—For use in smelting, refining, steel, chemical and other industries.

**Features**—Made of special fire-box quality and are of all-welded construction. Inside contour of kettles is such as to assure self-cleaning when kettle is dumped.

**Description**—Kettles have rated capacity of 19½ cubic feet. Inside diameter at top is 42 inches and inside depth, 24 inches. Top flange, 1½ inches thick, is slotted to receive swing bolts. Bottom of kettle is a standard A.S.M.E. ellipsoidal head of  $\frac{5}{8}$  inch thick plate. More complete specifications from manufacturer upon request.

**TREADWELL CONSTRUCTION CO.,** Dept. EP, 629 South Twelfth St., Midland, Pa.

When inquiring specify EP1584... see information request blank, pgs. 16-17

## Put "VIBRATION" To Work

### MOVING MATERIALS THE EASY WAY

Open Up "Constipated" Bins and Chutes with

Adjustable Power  
**ELECTRO-MAGNET VIBRATORS**

Make Stubborn Materials Flow Freely

Control the Feed of Bulk Material with

**VIBRA-FLOW VIBRATORY FEEDERS**

From lbs. to tons per hour by the twist of a Rheostat.

Weigh Feed Material in a Continuous Flow with

**VIBRA-FLOW GRAVIMETRIC FEEDERS**

to a 99% Accuracy. Eliminate Guesswork



## SYNTRON CO.

110 LEXINGTON AVENUE

HOMER CITY, PA.

When inquiring specify EP1585... see information request blank, pgs. 16-17

## Complete Metering Unit

Includes Meter, Pump, Engine & Air Release

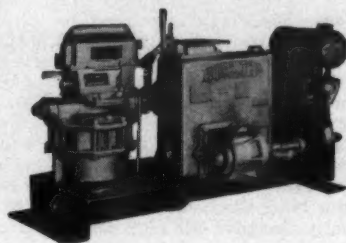
**Uses**—Plants where comparatively small quantities of petroleum products and other liquids are handled and where power is not conveniently available; also on tank trucks not equipped with power take-off.

**Features**—Rotary pump, gasoline engine for operating pump, air release containing built-in strainer and by-pass relief valve, and wide choice of meters—all available in this one compact unit. Can be used on portable truck or other equipment not equipped with power take-off. Easily installed. Dial selected can be used with maker's "Pre-determining Adapter" for delivering pre-set quantities.

**Description**—Pump is positive displacement, high vacuum, V-belt driven with 1¼" suction connection, and self-priming. Air-release removes air from liquid before it reaches meter, and built-in strainer removes dirt before liquid reaches pump. Engine is Lauson Model RLC, four-cycle, air-cooled operation—has integral hand lever starter, aluminum cylinder heater carburetor. Base on which unit rests is 10 gauge, all welded and braced black iron.

**S. F. BOWSER & CO., INC.,** Dept. EP, 1302 E. Creighton Ave., Fort Wayne, Ind.

When inquiring specify EP1586... see information request blank, pgs. 16-17



## Gear Head Drive Mixer

Portable or Permanent

**Uses**—Heavy-duty type for use on viscous liquids and heavy mixing where viscosity may run as high as 3500 to 4000 centipoises such as found with paste, syrups, heavy slurries, heavy paints, etc.

**Features**—Working parts reduced to minimum. Shafts and couplings are machined and ground to close tolerances to do away with possible whip.

**Description**—Standard propellers are bronze chromium covered operating on either stainless steel or chromium plated shafts. Single or dual propellers are used and both body shafts and propellers may be made of any special metal. Gears are heat treated helical type. Bearings are ball and Timken. Gear housing is of "sealed grease" type. Gear drive mixers as a standard operate at 400 r.p.m. and are of single parallel variety, but can also be furnished in double or even triple parallel as well as right angle drives to give almost any desired speed. Motors are of standard drip-proof type with motor supports and screw clamps of bronze. Special motors such as totally enclosed and explosion proof are available in most sizes. Portable types of mixers are made in sizes from 1/30 to 10 H.P., either direct or gear driven. Permanent vertical mixers and agitators are built in sizes from ¼ to 50 H.P. Catalog No. 75 lists specifications and supplies data on selecting mixers: number of propellers to use, what speed, horse power required etc.

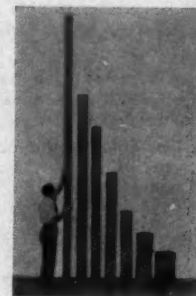
**INTERNATIONAL ENGINEERING, INC.,** Dept. EP, Dayton, Ohio.

When inquiring specify EP1587... see information request blank, pgs. 16-17



## WIRE AND FILTER CLOTH

### REQUIREMENTS PROMPTLY SHIPPED



Wire cloths stacked in widths up to 14'.

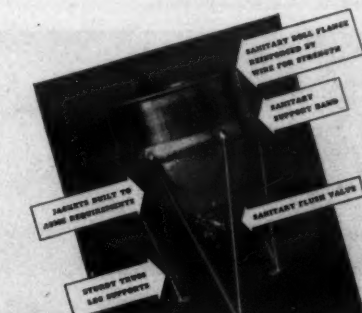
NOW IS THE  
TIME TO  
PREVENT  
BREAKDOWNS  
THROUGH BETTER  
SCREENS  
LEAVES  
ETC.

The wide range of fabrics and weaves carried in stock—the unrivaled facilities of our plant for fabricating wire and screen assemblies—and our skilled workmanship, enables us to do even the "difficult" job economically and rapidly.

If you want a cleaner filtrate, a faster throughput or reduced filter fabric costs, get in touch with us. We can serve you intelligently, economically and promptly.



When inquiring specify EP1588... see information request blank, pgs. 16-17



## NEW PFAUDLER JACKETED INDUSTRIAL PROCESSING KETTLES

Stainless Steel—Nickel or Monel Metal

Increased production due to more rapid heating, is just one of the outstanding features of the new line of Pfaudler Jacketed Industrial Processing Kettles. No jacket stuffing box is used. Steam enters through a special steam inlet nozzle, thus effecting rapid heat transfer. Where mixing is required, the new Pfaudler single motion agitator with baffles and scrapers produces action equivalent to double motion mixers at a much lower cost.

All kettles are fabricated to A.S.M.E. regulations for standard jacket pressures of 60, 100, or 125 lbs. per square inch. They are available in Stainless Steel, Nickel, or Monel metal construction in true hemispherical shape for maximum strength.

One piece lift-off or two piece hinged covers are obtainable in Stainless Steel, Nickel or Monel metal. Sizes range from 30 to 300 gallons. Also available in tilting design. Bulletin 797 describes these new kettles.

**THE PFAUDLER CO.,** Executive Offices: Rochester, N. Y. Factories: Rochester, N. Y. and Elmhurst, O. Branch Offices: New York, Boston, Philadelphia, Chicago, Cincinnati. Pfaudler Sales Co., San Francisco and Los Angeles. Representatives in principal cities.

When inquiring specify EP1589... see information request blank, pgs. 16-17

## "Send up that Elwell-Parker with a Skid-load of Gas!"



SOLIDS



LIQUIDS



GASES



When inquiring specify EP1590... see information request blank, pgs. 16-17

WHATEVER your materials—solids in bags or boxes; liquids in barrels or carboys; gases in bottles, or any material in any form—

Elwell-Parker Power Industrial Trucks will transport them economically by creating savings as they go.

Do you know that many of the most advanced designs of Elwell-Parker streamlined Trucks (both rear-control and center-control) were first sold to leading Companies in the Process Industries?

And some of the newest and most economical methods of handling Process Loads were developed by Elwell-Parker Engineers to give your Trucks maximum earning power?

It will pay you to invite an Elwell-Parker Engineer to survey your plant now. Take him into your confidence—give him all the facts he needs, to lay out an installation guaranteed to pay back its cost within a stipulated period of operation.

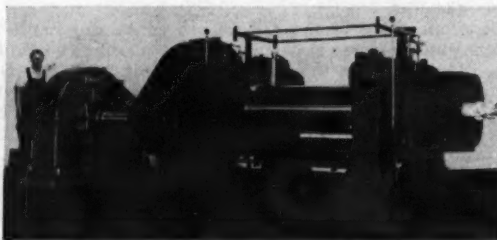
The Elwell-Parker Electric Company, 4239 St. Clair Ave., Cleveland, Ohio.

## Hevi-Duty Plastics Mill

Mills Tough Plastics Under High Heat

Uses—Specifically designed for a manufacturer to mill tough plastics under high heat where lighter equipment would not do the job. These mills are used for processing materials which are later made into powders for molding purposes. Material comes to the mill as crystals of cellulose acetate. Crystals are crushed and mixed together between rolls of mill at temperature of approximately 300 deg. F.

Features—24" dia. rolls are chrome-plated, counterbored to a large diameter and fitted with Johnson joints especially designed for high temperature. Shear pin type of



safety on adjusting screws prevents breakage of rolls, housings and other machine parts. Pull-back attachment, integral with safety devices, permits adjustment of rolls forward as well as back.

Description—Rolls are driven individually by 150 HP motor through enclosed reduction gear unit. Roll journal boxes have full circle bronze liners—water cooled and lubricated by a force-feed system, with pump located on high speed shaft of reduction gear unit. Sump under mill has coil in it for cooling the oil. Oil seals on both ends retain lubricant and keep oil from face of roll. Stainless steel guides have ratchet adjustment to raise them vertically, thus permitting cleaning rolls under guides as well as undersides of guides. Mill pan is stainless steel equipped with rollers for easy adjustment from front to back. Cut spur steel connecting gears permits maximum opening of rolls.

FARREL-BIRMINGHAM CO., INC., Dept. EP, Ansonia, Conn.

When inquiring specify EP1592... see information request blank, pgs. 16-17

## Removable Rubber Liners For Tanks and Barrels

For All Shapes and Sizes—Metal or Wood

Uses — Originally used in bleach barrels handling sodium hypochlorite, liners are now being made for all shapes and sizes of metal or wooden tanks, either in plants or on trucks — for handling acids, alkalis, salt solutions and corrosive liquids.

Features—Liners are removable—can be removed and returned to factory when repairs are necessary. Additional liners can be made from original mold, without shipping tanks to and from factory. Accumulated chemical gases forming blisters between tank and liner can be released without puncturing liner. When steel tanks need repairing, liners can be removed and replaced without costly damage to rubber.

Performance — Cut shows four-tank truck — each tank 250 gallons—used for hauling sodium hypochlorite. Following are a few of acids and aqueous solutions maker states these liners will handle satisfactorily at temperatures not exceeding 150 deg. F.: acetic acid up to 80%,



## Better Footing!

—for tanks, water softeners, stills, cookers and other containers with Simplex Adjustable Tank Supports.

They eliminate costly precast or fixed foundations or cradles. They provide ready adjustment for leveling or gravity flow. Drain pipes and residual sumps more readily accessible. Bacterial and dirt pockets eliminated, floor flushing facilitated. Neater appearing. More practical.

Available in 28 sizes with 12 types of removable saddles which can be welded to cradle bands or to tanks in the fabricating shop.

TEMPLETON, KENLY & CO. Chicago, Ill.  
Sole Manufacturers

SIMPLEX Jacks

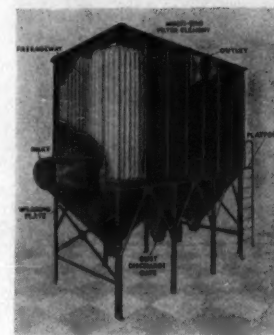
Awarded the Gold Medal for Safety



When inquiring specify EP1591... see information request blank, pgs. 16-17

## DUST always REDUCES PROFIT DRACCO DUST CONTROL Always SAVES MONEY

Write For Bulletin No 302



Dust should never be tolerated in any Chemical Plant because it is destructive in MANY ways. Here are the ways that DRACCO Dust Control saves money: (1) Protects health of workers. (2) Reduces repair bills and prolongs life of equipment. (3) Increases efficiency of the entire plant. (4) Is protection against expensive and annoying law suits. Even if you have only a small amount of Dust it will pay to consult DRACCO Engineers. They have over 25 years experience solving Dust problems.

Write for Bulletin No. 302

DRACCO CORPORATION

Successors to The Dust Recovering & Conveying Co.  
4060 East 110th Street, Cleveland, Ohio New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

When inquiring specify EP1593... see information request blank, pgs. 16-17

ammonia liquor, cadmium cyanide, caustic soda, hydrochloric, nickel sulphate, sodium chloride, sulphuric 55% concentration, tannic acid, zinc chloride, etc. (More complete list from manufacturer).

GOODALL RUBBER CO., INC., Dept. EP, 5 South 36th St., Philadelphia, Pa.

When inquiring specify EP1594... see information request blank, pgs. 16-17

## Water Cooler

Controlled Temperature Between 34 and 50 Deg.

Uses — Water cooling jobs requiring accurate temperature control and sanitation find use for this machine in such industries as bottling, dairy, baking, and industrial processing. Used also for drinking water systems.

Features — Stainless steel used for entire water circuit, consisting of distributor, cooling plates and reservoir. Entire cooler is a "packaged unit," charged with refrigerant and tested before leaving factory.

Description — Unit has a temperature selector dial assuring uniform controlled water temperature anywhere between 34 and 50 deg. "Balanseal" condensing unit in base of cooler. Units are available in three and five horsepower models — one light and one heavy duty in each horsepower rating. YORK ICE MACHINERY CORP., Dept. EP, York, Pa.

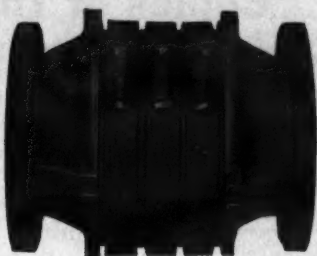
When inquiring specify EP1595... see information request blank, pgs. 16-17





## BADGER COMPACT PACKLESS EXPANSION JOINTS

Save on  
Process  
Plant Pipe  
Lines



### Stainless Steel

for the higher temperatures (up to 900°F.), the higher pressures, or where corrosion is a factor. These BADGER Stainless Steel Expansion Joints are very compact, saving in insulation. They require no packing, saving in maintenance.

Other BADGER Expansion Joints available for other classes of service. In writing for literature, tell us about your expansion problems.

**E. B. BADGER & SONS CO.**  
75 Pitts St., Boston, Mass.

When inquiring specify EP1598...see information request blank, pgs. 16-17

## Connelly POWDERED IRON



**A Reliable  
Dependable  
Product**

### Connelly Manometers

For portable or stationary use. Tubes made of unbreakable glass substitute withstand rough usage. Needle valves at top may be closed to retain fluid for portable use. A wide range of sizes with or without valves.

### Connelly

#### Back Pressure Valves

A complete line to meet every requirement. Extremely sensitive with minimum resistance to flow. Carefully engineered, and ruggedly built, providing a positive check against reverse flow.

Write for bulletins

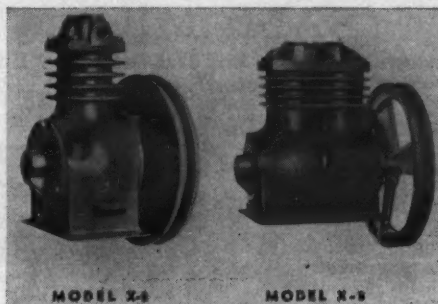
For years Connelly has been the dependable source of supply for powdered iron among leading manufacturers. Connelly Powdered Iron is a carefully manufactured product of the highest quality—ideal for use in the manufacture of waterproofing materials, cement hardening compounds, and various chemical and metallurgical processes. It is available in many mesh sizes and can be supplied in your containers.

Consult Connelly today.  
Samples will be submitted  
for inspection and testing.

**CONNELLY**

IRON SPONGE &  
GOVERNOR CO.  
CHICAGO, ILL. — ELIZABETH N. J.

When inquiring specify EP1597...see information request blank, pgs. 16-17



## Single Stage Compressors

Light Weight For Low Pressure Service

**Uses**—Model X-2 is a single stage, single cylinder air compressor weighing only 15 lbs., and satisfactory for piston displacements up to 2.8 CFM at maximum speed, 875 RPM. Model X-8 is single stage, duplex cylinder compressor weighing 31 lbs., and has piston displacement of 8.7 CFM at maximum speed.

**Features**—Compact, light weight units. Has disc type, clock spring steel valves—valves mounted in head and each can be removed for inspection without disturbing other valves.

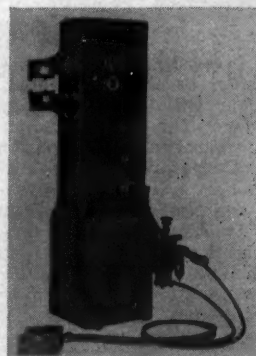
**Description**—Cylinder and crankcase on both models cast in one piece to eliminate excess weight and to simplify construction. Crankshafts are drop forgings from 1035 S.A.E. heat treated steel, perfectly balanced with integral counterweights. Aluminum alloy connecting rods are standard, and crankcases are totally enclosed and dust-proof. Lubrication is constant level splash type. Cooling is accomplished by deep horizontal fins on cylinder. Pistons for both models are alloy iron fitted with two compression rings and one oil control ring. Main bearings are hard rolled bronze.

QUINCY COMPRESSOR CO., Dept. EP, Quincy, Ill.

When inquiring specify EP1598...see information request blank, pgs. 16-17

## High Speed Riveter

Full Riveting Stroke Less Than 1 Second



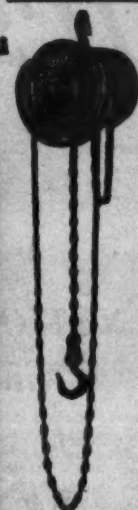
**Features**—Pneumatic, high speed with complete riveting stroke (forward and return) in less than one second. Economical air consumption as air cylinder power is multiplied and transmitted to driving jaws through ground alloy steel wedge and anti-friction roller bearings. Foot actuated valve can be moved about the floor for convenient operation.

**Description**—Mechanism is entirely enclosed. Riveter is equipped with air filter, air supply lubricator and mechanism is Alemite lubricated. Driving jaws, of standard heat treated alloy bar steel stock, are of "alligator" or "nut cracker" type shaped to avoid interference with assemblies being riveted. Jaws may be removed quickly and any number of stakes may be kept on hand to accommodate varying requirements of users. When operated at 80 lbs. air pressure, riveter exerts 20 tons on dies which will drive up to 3/4" diameter rivets cold and 1/2" rivets hot. Die stroke may be anything to a max. of 3".  
HANNA ENGINEERING WORKS, Dept. EP, 1765 Elston Ave., Chicago, Illinois.

When inquiring specify EP1599...see information request blank, pgs. 16-17

## SAFE ECONOMICAL EFFICIENT

YALE



THAT'S THE  
YALE CHAIN HOIST!

Yale Hoists are the best buy of the materials handling field. In no time at all they more than pay for themselves by the economies their efficiency effects.

Not only more efficient—they're safer too.

In the market for a hoist? Remember—YALE BUILDS THEM BETTER!

THERE'S A YALE CHAIN HOIST FOR EVERY PURPOSE. CAPACITIES 300 LBS. TO 40 TONS.

SEND FOR FREE CATALOG

THE YALE & TOWNE MFG. CO., Philadelphia, Pa.

Please send me without obligation your new 1940 catalog showing the entire Yale Hoist Line.

Name.....

Address.....

When inquiring specify EP1600...see information request blank, pgs. 16-17

## A New Book on Screens



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● A new 24-page illustrated catalog complete with engineering information, dimension tables and illustrations of applications handling a wide variety of materials. Ask our nearest office for a copy.

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When inquiring specify EP1601...see information request blank, pgs. 16-17

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**SEPT. 18, 19, 20**

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★  
**"The Annual  
Round-up of  
New Sales Ideas"**

★

## BALL MILL

**Pedestal On Drive End Has Integrally Built Motor Base**

**Uses** — Particular type of drive is available with all of maker's ball and pebble mills for wet or dry grinding of products in the paint, chemical, plastics and allied process industries.

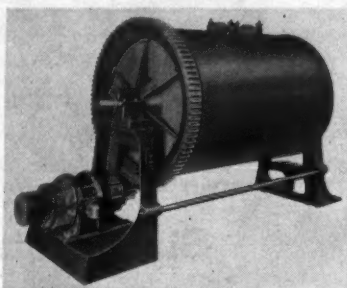
**Features** — Assembly has inching magnetic motor mounted brake

with three-button station for starting, stopping and inching mill to desired position and holding it there for charging or discharging.

**Description** — Mill is of all welded steel construction with shell made of extra heavy gauge, high carbon or chrome manganese alloy steel. Mill is mounted on pedestals with broad feet. Pedestal on drive end has motor base built integral with it (see cut). Geared head motor rests on machined base which permits quick and easy alignment of gear and pinion.

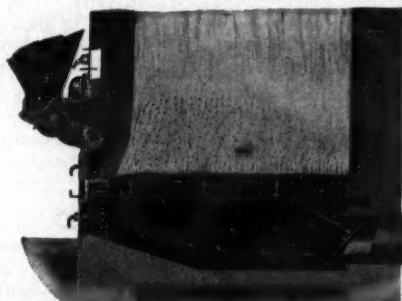
**ABBE ENGINEERING CO., Dept. EP, 50 Church St., New York, N.Y.**

*When inquiring specify EP1602... see information request blank, pgs. 16-17*



## Spreader Stoker

**Overfeed Type Burns Wide Range of Fuels.**



**Uses** — For use with horizontal return tubular and water tube boilers, industrial dryers and other heating and processes.

**Features** — Burns wide range of fuels. Lower grades of

bituminous and lignite mined in western states can be used, as well as the better grades of bituminous coals. In combination with coal, stoker will burn wood and other refuse. Stoker employs Over-Throw Rotor Action in which fine particles of fuel are burned in suspension and coarse coal on the grates. Curved rotor blades distribute fuel uniformly sideways over entire width of furnace. Operation is flexible and responds to sudden changes in load with little if any change in steam pressure. Cleaning fire is simple operation and during periods of light loads one or more sections of stoker may be discontinued by regulating fuel feed and air supply to those sections. Unit lends itself to automatic regulation.

**Operation** — These overfeed spreader stokers may be driven by steam turbines or electric motors. Fuel is fed automatically from stoker hopper to revolving rotors, which throw it over and spread it into furnace. High burning rates per square foot of grate area are possible and comparatively thin fuel bed is penetrated by an infinite number of air streams through grate surface. Air for combustion may be preheated if desired—the air being supplied to furnace in proportion to quantity of fuel. Units are made in wide range of sizes in both stationary and dumping grate types (stationary grate type shown in cut). Catalog 840 gives complete details.

**DETROIT STOKER CO., Dept. EP, General Motors Bldg., Detroit, Mich.**

*When inquiring specify EP1603... see information request blank, pgs. 16-17*

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## Gas Fire Extinguisher

### Kills Liquid Fires With Carbon Dioxide



**Uses**—For extinguishing fire in flammable liquids, electrical equipment and in industrial processes involving non-carbonaceous combustible materials. For laboratories, paint, rubber, chemical and other plants with

processes involving flammable liquids or electrical circuits. Units also supplied in built-in fixed system types for protecting concentrated fire hazards such as mixing and storage tanks, leather treating, etc.

**Features**—Because discharge of carbon dioxide gas and snow is dry and quickly evaporates, this type of extinguishing does not harm delicate materials or liquids in process. Gives off no noxious fumes and operations may be resumed immediately after gas discharge. Gas causes no delay for clean-up nor does it soak windings of electrical equipment. Will penetrate around obstructions and reach base of fire.

**Operations**—Quick release valve permits discharge of snow and gas through hose and discharge horn with great rapidity. Can be carried or wheeled to scene of fire and gas clouds can be discharged into room or at seat of fire to quickly smother flame. Action and smothering effect of snow and gas dilutes oxygen content to point at which fire cannot burn.

**Description**—These carbon dioxide extinguishers consist of steel cylinders which hold gas under pressure of 800-

1000 lbs. per sq. in. Portable units have hose and discharge horn from which gas expands 450 times as it billows out. Units come in all sizes ranging from 2 lb. to 150 lb. capacity. Fixed systems discharge from cylinders through pipes to seat of fire and can be operated by remote control to provide either local application or total flooding of enclosed spaces.

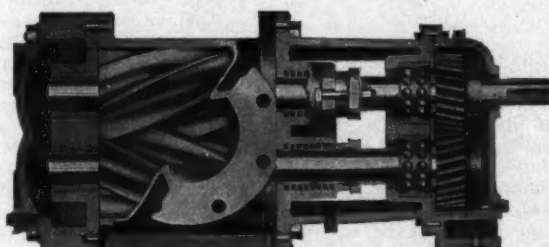
**WALTER KIDDE & CO., INC.**, Dept. EP, 140 Cedar St., New York, N. Y.

When inquiring specify EP1604...see information request blank, pgs. 16-17

## Helical Gear Pumps

### Positive Displacement—Pulseless Discharge

**Uses**—For handling either viscous or thin liquids at discharge pressures up to 200 lbs. per sq. in., with capacities from 2 to 200 gallons per minute. Used in power and process plants, refineries, distilleries, etc., for handling viscous fluids like Bunker C fuel oil or molasses, thin liquids like hot varnish, etc.



**Features**—Now available in sizes under 3". Even, pulseless discharge practically eliminates vibration in pump and piping, and in the case of fuel oil, results in an even flow at burner tips for higher efficiency.

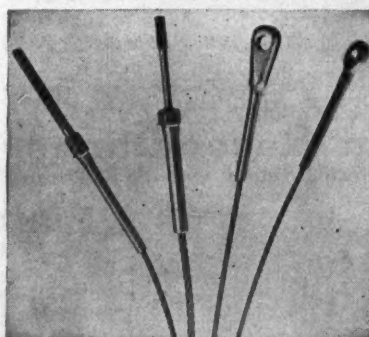
**Description**—Helical gear rotors of these new models are driven by separate timing gears, pitched in a direction opposite to the rotors to compensate for end thrust. Units are available in three types: timing gears in head; external gears with outboard closed head; and external timing gears with double external bearings. Pumps are reversible. Units are made in variety of metals and alloys, and can be furnished jacketed where necessary.

**QUIMBY PUMP CO.**, Dept. EP, 340 Thomas St., Newark, New Jersey.

When inquiring specify EP1605...see information request blank, pgs. 16-17

## Wire Rope Terminals

Terminals Develop Full Strength of Wire Rope.



the wire rope, thus terminals develop full strength of rope.

**Description**—Made in complete range of sizes for industrial use. Terminals are available in eye end, fork end, turnbuckle and stud end types. Units are made in both stainless steel and nickel steel and can be supplied attached to wire ropes of stainless steel and Monel metal, as well as standard steel ropes. Can be made into specification lengths of wire rope.

**MACWHYTE CO.**, Dept. EP, Kenosha, Wisconsin.

When inquiring specify EP1606...see information request blank, pgs. 16-17

## THREE NICKEL-CLAD STEEL CORK MIXERS

### SAVE MANUFACTURER \$30,000 IN 4 YEARS



Three special No. 10-B Monarch Horizontal Mixers, with boxes made of Lukens Nickel-Clad Steel, were fabricated by Sprout, Waldron & Company, Inc., Muncy, Pa., for a cork manufacturer late in 1935. According to the cork company, these three mixers have saved more than \$30,000 in four years. . . . The inner surface of nickel keeps moist cork, as it is mixed with binder, free from black stains which result from contact with iron. As a result,

each Nickel-Clad Steel mixer saves about \$2,500 a year—many times its original cost! . . . Similar Clad Steel mixers save by preventing harmful metallic contamination for manufacturers and users of textile wetting agents, rubber, oleomargarine, fatty acids and food products, pharmaceuticals, plastic and paint chemicals, glue, gelatine and other substances. Write for further information to Lukens Steel Co., 87 Lukens Bldg., Coatesville, Pa.



When inquiring specify EP1607...see information request blank, pgs. 16-17



That's the operating economy of this new Boiler Feed Pump

**ORDINARY** boiler feed pumps must use most of their effort in overcoming pressure in the boiler. The Johnson "Pressure Equalizing" pump, however, admits this boiler pressure into the pump receiver, thus equalizing the pressure on the pump discharge. All the pump must then do is raise the returned condensate just a short distance to the boiler level. In a 150 h.p. boiler, for instance, where the ordinary reciprocating or high speed centrifugal pump requires 7½ to 10 h.p., the Johnson "Pressure Equalizing" unit uses only a 1 h.p. low pressure, slow speed pump.

With boiler pressure on the pump suction, condensate up to 300" can be handled with no danger of vapor lock. Actual records show that this increase in thermal efficiency effects fuel savings up to 15%.

Let us show you how this "Pressure Equalizing" pump will quickly pay for itself in fuel saving and reduced power costs. It is now available in sizes suitable for boilers up to 250 horsepower. Write for the new Bulletin.

How does the "Pressure-Equalizing" Pump Work?

• The return flows into the receiver until it is filled. Electrodes in this receiver then complete an electrical circuit, opening a valve to admit boiler pressure into the receiver and at the same time starting the pump. When the water is pumped out of the receiver, the circuit between the electrodes is broken again. Pump is stopped and receiver vented, ready to repeat the cycle.

Product of The Johnson Corporation  
225 WOOD ST., THREE RIVERS, MICHIGAN

When inquiring specify EP1608...see information request blank, pgs. 16-17

## NEW SILICA

To Replace Imported Grades



### TAMMS SILVATEEN FOAM AA

● Replaces German Imported Schultz Silica and Neuberger Chalk. Has excellent colloidal suspension and polishing qualities. Ideal for manufacture of government metal polishes.



### TAMMS VOLCANIC ASH

● For scouring powders, cleansers and hand soaps. All required meshes—Finest quality—Send us your specifications—We'll quote prices that are right.



### SILICAS and SILICA SAND

● Amorphous, crypto crystalline and crystalline. Water ground, water floated, and air floated grades. Special grinds for metal polish use to replace imported silicas. **SAVE MONEY**—Send us your specifications.

### TAMMS SILICA CO.

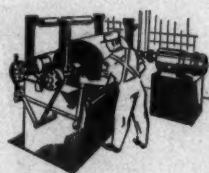
228 N. LA SALLE ST.

CHICAGO, ILL.

When inquiring specify EP1609... see information request blank, pgs. 16-17

## Space-Saving

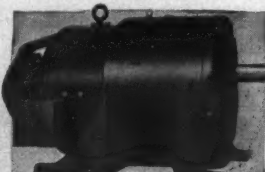
### RELIANCE A-C. ★ D-C. GEARMOTORS



These efficient, space-saving units, combining motor and speed reducer, keep down installation costs and maintenance... Simplicity of the Reliance design facilitates taking apart and assembling... Wide range of ratios for a-c. and d-c. ... Constant-speed, multi-speed, adjustable-speed types... Open, splash-proof, fan-cooled and explosion-proof designs.

Get Bulletins 403 and 404 for details.

Explosion-proof, fan-cooled A-c. Gearmotor. Approved for use in hazardous locations.



Adjustable-speed D-c. Reliance Gearmotor, double reduction.

Reliance Electric & Engineering Co.

1092 Ivanhoe Road

Cleveland, Ohio

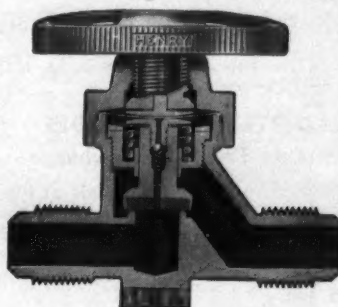
Branches and Representatives in Principal Cities



When inquiring specify EP1610... see information request blank, pgs. 16-17

## Diaphragm Packless Valve

"Balancing-Action" Assures Positive Valve Opening — Will Not "Stick Shut"



**Uses** — For volatile gases and liquids — refrigeration gases, cooking and heating gases, gasoline, and other fluids which are dangerous and hard to handle.

**Features** — These diaphragm packless valves offer a hermetic seal for volatile gases and liquids, thus providing a safety factor. Have no stem packing, hence no leaks

from this source. Diaphragms furnish perfect seal whether valve is open or closed. Valves will not "stick shut" as pressures above and below seat are equalized at instant of opening — this "balancing-action" allows use of a lighter spring and assures positive opening at all times. Valve is non-directional as inlet or outlet lines can be connected to either port eliminating tube bending. Light weight stainless steel spring eliminates corrosion factor and permits easy opening and closing. Non-rotating floating bearing plate in upper stem eliminates torsional wear and strain, prolonging diaphragm life. Oval handwheels offer natural grip.

**Operation** — To accomplish the "balancing-action," or equalization, a balancing channel is provided through stem axis. When valve is closed, top port of this channel is sealed by contact with bottom diaphragm, a positive metal-to-metal seal. When handwheel is turned to open valve, diaphragms, because of pressure beneath them and their own snap action, rise and expose upper port of balancing channel. High pressure above seat is instantly released through channel to lower pressure area below seat, thus equalizing pressures and allowing valve to open easily.

**Description** — There are four laminated diaphragms: top of phosphor bronze to minimize wear, bottom of stainless steel, while center laminations are of special soft bronze to provide self-sealing action—thus making diaphragm assembly puncture-and-fracture-proof. Made in all standard sizes, 2-way, 3-way, and angle in this size range: Flare fittings— $\frac{1}{4}$ " to  $\frac{5}{8}$ "; solder connections— $\frac{1}{4}$ " O.D. to  $1\frac{1}{2}$ " O.D.; male pipe thread— $\frac{1}{4}$ " to 1".

HENRY VALVE CO., Dept. EP, 1019 N. Spaulding Ave., Chicago, Ill.

When inquiring specify EP1611... see information request blank, pgs. 16-17

## Oil Drum Reconditioner

Cleans & Dries Both Inside & Outside of Drums

**Features** — Machine automatically cleans and dries both inside and outside of used oil drums in one continuous operation, thus greatly reducing cleaning expenses.

**Description** — This "Portco" reconditioner consists primarily of a motor-driven turntable and pumps, suitable spray and siphon units and tanks, all enclosed in a metal cabinet. Machines are available in single or multiple units.

**Operation** — Drums are placed on turntable, a combination pressure and siphon nozzle inserted in drum opening, and cabinet door is closed. Closing door starts automatically



## Not A Dry Bearing in the Biggest Process Plant!



WHATEVER the size and operating speed of your machines;

WHATEVER the number or location of bearings;

WHATEVER your past experiences with lost production caused by faulty lubrication—

you can install Farval Centralized Lubricating Systems of the right size and type for each given application—and eliminate all future delays resulting from lack of lubrication.

Farval Systems include: 1—the Dualine System—manual or automatic—for all large equipment; 2—the DX Multiple Measuring Valve Block, illustrated above; and 3—the Dualine, Jr., a small "edition" of the standard Dualine.

With Farval, lubricant is forced under high pressure, and in exact measured quantities, to each individual bearing—missing none.

Experience gained through installing Farval throughout the Process Industries should help you save money, too. May we send a Representative?

The Farval Corporation, 3257 East 80th Street, Cleveland, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Manufacturers of Automotive and Industrial Worm Gearing

In Canada: PEACOCK BROTHERS LIMITED

# FARVAL

CENTRALIZED SYSTEMS OF LUBRICATION

When inquiring specify EP1612... see information request blank, pgs. 16-17

controlled cycle during which the machine successively forces into and over the drum, a caustic solution, rinse water, and air for drying, simultaneously siphoning all liquid from drums. On completion of cycle, control de-energizes. Electric circuit is reset automatically when cabinet door is opened.

PORTLAND CO., Dept. EP, Portland, Maine.

When inquiring specify EP1613... see information request blank, pgs. 16-17

## Nonslip Pulley Covering

Practically Eliminates Belt Slippage

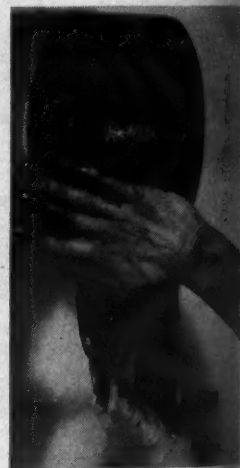
Material invented 40 years ago, made to order for few customers, and now available on commercial scale.

**Features** — Single application usually lasts two years. Practically eliminates slippage enabling users to get higher machine production.

**Application** — Covering comes in sheets containing 9 square feet. Material is then torn in strips of proper width and length to go twice around pulley, including lapping. To apply covering, pulley must be absolutely clean. Strips of proper width and length are torn off and soaked for few moments in hot water to soften substance. Then, material is applied tightly to pulley as illustrated in accompanying picture. Samples are available from manufacturer for testing.

NONSLIP PULLEY COVERING CO., Dept. EP, 777 Hotel Ave., Buffalo, N. Y.

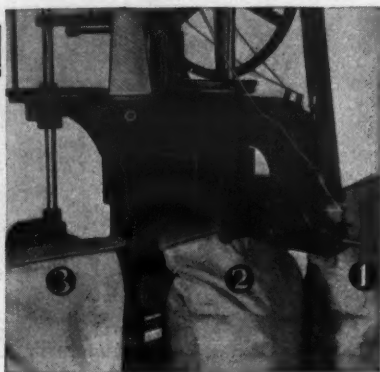
When inquiring specify EP1614... see information request blank, pgs. 16-17





## NEW!

### A Special Machine for Closing MULTI-WALL PAPER BAGS



3. Closed tape-bound bag 2. Bag in closing process 1. Open, filled bag

HERE is the new Union Special Style 80600 H machine for producing a secure, neat appearing, sewed tape-bound closure on all sizes of open-mouth multi-wall paper bags. The unit consists of an enclosed type heavy duty sewing head complete with folder and guide, adjustable for  $2\frac{1}{4}$  or  $2\frac{1}{2}$  inch paper tape, and a built-in Union Special automatic mechanical tape clipper. Can be mounted on several types of bases to fit into existing production systems. Complete information supplied upon request. For quotations and recommendation, state type of product handled, production per minute or per hour, size of bags, filling and weighing equipment used and power specifications. Write today for prompt answer. UNION SPECIAL MACHINE COMPANY, 442 N. Franklin St., Chicago, Illinois.

## UNION SPECIAL

When inquiring specify EP1615... see information request blank, pgs. 16-17

## 172 PAGES OF AIDS

### for Chemical and Processing Plant Men!

Barrett's Junior Catalog should be on your desk — it contains useful material handling suggestions and describes equipment that is saving large sums in chemical, paint, lubricant, rubber, foodstuffs, pharmaceutical and other processing plants.



### TYPICAL PAGES—

Beam and Dial Type Scale Trucks.  
Lift Trucks, Pincer Trucks and Stacker Trucks for Barrels and Drums.  
Oxygen and Gas Cylinder Trucks and Skids.  
Barrel and Drum Storage Racks.  
Portable Barrel Elevators.  
Portable Barrel Cranes.

Barrel and Drum Elevating Tilters and Pourers.  
Barrel and Drum Drain Racks and Pouring Racks, Carboy Pourers and Trucks.  
Truck Unloading Barrel Skids.  
Spring Frame Trucks for Handling Explosives, Green Molds, Ceramics, etc.  
Electric Hoists, etc.

Send for this helpful book TODAY — it will save for you!

# BARRETT

BARRETT-CRAVENS CO.

3276 W. 30th Street

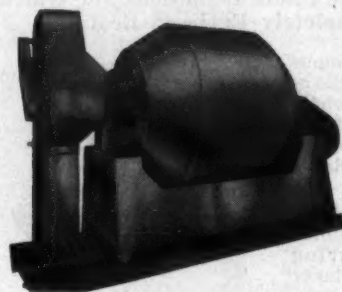
Chicago, Illinois

Representatives Everywhere

When inquiring specify EP1616... see information request blank, pgs. 16-17

## Horizontal Mixer

Material Course Changed 26 Times Per Minute



**Uses**—For grinding and mixing using principle of cut-divide-mix.

**Features**—Field tests and experimental work indicates completeness of mix and shortening of mixing time. Thorough seal at both ends of drum by special double seals held in spring tension so that finest

material will not escape.

**Operation**—Unit has combination of mixing and lifting blades and dual spirals running in opposite directions within the drum. Course of material in mixing cycle is changed and interrupted 26 times per minute. Mixing and lifting baffles are offset so that they alternately collect their loads from opposite ends of drum and feed them evenly back to dual spirals. Spirals revolving in opposite directions again divide the load, each spiral carrying its portion to opposite end of drum. Six baffles and two spirals operate in drum revolving  $4\frac{1}{2}$  times per minute.

**Description**—Unit is built for heavy-duty service. Drum, shaped for maximum strength, is heavy gauge steel welded throughout. Pouring edges of baffles are reinforced. Slow-speed shafts are carried in bronze bearings; all others in self-aligning, dust-tight ball bearings. All gears and sprockets are cut-tooth.

PRATER PULVERIZER CO., Dept. EP, 1802 South 55th Avenue, Chicago, Ill.

When inquiring specify EP1617... see information request blank, pgs. 16-17

## Portable, Four-Cylinder Air Compressor

Low Price Unit — No Pulsations

**Uses** — General use for small compressors, and where units are needed without necessity of large air storage tanks.

**Features** — Four-cylinder unit delivers from 3 to 5 cu. ft. air per minute, depending upon motor or engine. Low price unit. Compressor can be driven with  $\frac{1}{2}$



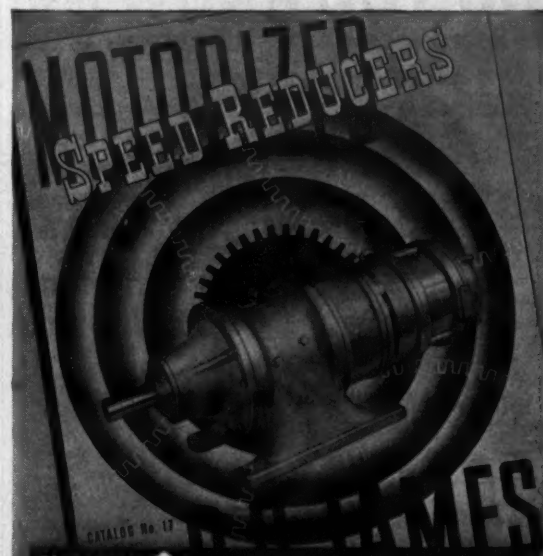
motor or small gasoline engine when electric power is not available. Delivers high, steady pressure with no pulsations.

**Description**—Built in two sizes—four and two cylinders. Uses four steel pistons (in large model) with step cut rings. Powered with  $\frac{1}{2}$  H.P. motor, it delivers 4 cu. ft. air per minute at 60 lbs. pressure. Pressure is adjustable from 0 to 80 lbs. Safety valve can be set for any desired load. Unit is cooled by fan blade type of flywheel and extra deep fins in block and head. Air cleaning chambers filter air and remove water, oil, etc. Valves, of stainless steel, are easily removable and intakes are protected with special filters to prevent breathing in of mist, thus making it unnecessary to clean valves after each job.

EMPIRE COMPRESSOR MFG. CO., INC., Dept. EP, Benson St. & Penna. R. R., Reading, Cincinnati, Ohio.

When inquiring specify EP1618... see information request blank, pgs. 16-17

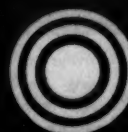
To secure EQUIPMENT PREVIEW for your key men, turn to 'request slip'... pages 16 and 17.



Planetary

Catalog No. 17 contains 32 pages of engineering data, weights and prices of D. O. James motorized planetary gear reducers — the ideal reducer for large reductions in speed without sacrificing efficiency and compactness.

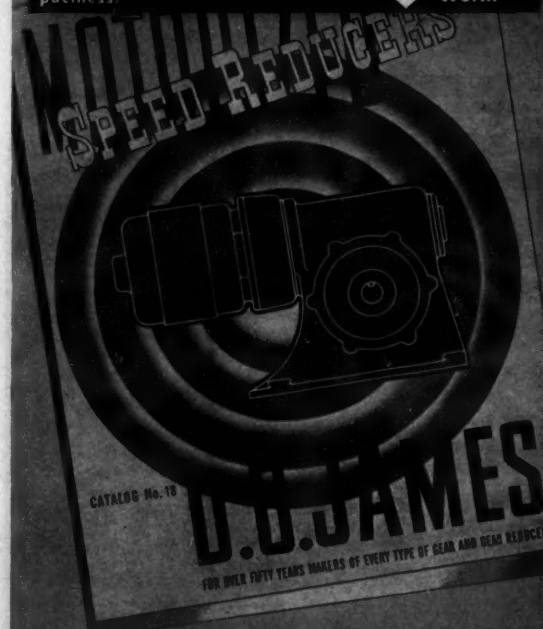
MODERNIZE



MOTORIZE

Catalog No. 18 contains engineering data, weights and prices of the D. O. James motorized worm gear reducer. Service factors, character of load and selection tables in both catalogs will prove helpful to your engineering department.

Worm



CATALOG No. 18

# D.O. JAMES

FOR OVER FIFTY YEARS MAKERS OF EVERY TYPE OF GEAR AND BEAR REDUCER

FOR BOTH CATALOGS — WRITE YOUR NAME ON ARROW

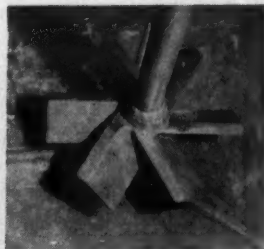
ATTACH TO YOUR LETTERHEAD AND SHOOT IT TO US

D. O. JAMES MFG. CO., 1120 W. MONROE ST., CHICAGO, ILL.

When inquiring specify EP1619... see information request blank, pgs. 16-17

## DO YOU KNOW THAT: LEAD BONDED TO--STEEL-COPPER-BRASS

- Will not creep.
- Transfers more heat.
- Resists vacuum.



Steel Stirrer  
Homogeneously  
Lead Covered

### HOMOGENEOUS LEAD LINING

is the solution to many corrosive problems where severe conditions exist. These linings are applied to the surface so as to make an inseparable bond under conditions of vacuum, mechanical shock or vibration and also severe thermal changes. Usually applied  $\frac{1}{4}$ " thick or thicker.



Jacketed Tank  
Homogeneous  
Lined

Write for Bulletin describing our Fabrication Service.

## HEIL & COMPANY

3098 W. 100 ST. CORROSION ENGINEERS CLEVELAND, OHIO

When inquiring specify EP1620... see information request blank, pgs. 16-17

## BRING YOUR GASKET TROUBLES TO US

Ordinary gaskets, pump packing and other sealing materials are frequently the "weak links" in the production of corrosives, chemicals, oils and liquids. Many chemical manufacturers have discovered the best possible protection for such VITAL ZONES is obtained with FEL-PRO products. FEL-PRO metallic or fibrous packings furnish such extra service under the most rigorous conditions.



### FEL-PRO METALLIC PACKING

FEL-PRO flexible metallic packing is furnished in standard and special styles for many applications in industrial and marine fields. Individual strands are formed by the longitudinal folding of foil. Metallic strands furnished either cored or uncored. Basic metals used are lead, aluminum or copper.

BUT FEL-PRO extra service is not confined to the product itself! FEL-PRO engineers are at your service to help you select the best obtainable material to fully satisfy the requirements of your particular production requirement. No matter how limited your needs, FEL-PRO engineers will be glad to work with you in providing the proper packing that will furnish extra service life and durability.

FELT PRODUCTS MFG. CO.  
1515 W. Carroll Ave., Chicago, Ill.



When inquiring specify EP1621... see information request blank, pgs. 16-17

## Double Interlock Roller Bearing

30,000 Hours Service Under Conditions For Which  
Adapted—Completely Enclosed Bearing

**Uses**—Designed for simplified mounting on ordinary commercial shafting where less heavy loads are to be carried than those requiring maker's clamp sleeve type of bearing.

**Features**—This pillow block uses special duplex Timken Roller Bearing with long extended inner race-ring extending completely through housing thus providing completely enclosed bearing. Race-ring is clamped throughout its entire length to shaft and is held by three-point anchorage at each end. Simple mounting.

**Mounting**—To secure bearing to shaft on which it is mounted, collars with two setscrews spaced at 120 deg. are placed on the outside of each end of extended inner race-ring. These setscrews pass through unthreaded holes in the race-ring, bear directly on the shaft on the one side and clamp the race-ring directly against shaft on other side.

**Description**—Pillow block is made in both expansion and non-expansion types. In non-expansion type, inner unit is mounted in two-piece cast iron housing with inside machined truly spherical to fit outside of inner unit. In expansion type, inner unit is mounted in two-piece cast iron outer housing with inside machined with straight cylindrical bore to fit outside of inner unit. Cap and base are machined at joint to insure accurate fit. Base of outer housing is machined to insure accurate backing, i.e., the distance from pillow block base to center of shaft. All normal radial, thrust and shock loads are successfully carried by this pillow block, but load capacity and top speeds may be increased somewhat if bearings are mounted on shafts ground to full size. Adequate labyrinth seals are provided to retain lubricant and protect against foreign materials.

DODGE MFG. CORP., Dept. EP, 513 South Union St., Mishawaka, Ind.

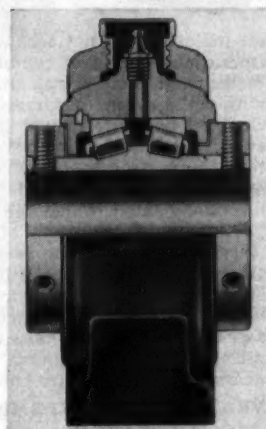
When inquiring specify EP1622... see information request blank, pgs. 16-17

## Tension Motor Base Automatically Maintains Belt Tension

**Uses**—To automatically maintain correct belt tension. Design makes unit especially suited to short center drives. Covers all types of drives—horizontal, vertical, or overhead. Operates with any type load—pulsating, steady or reversing.

**Features**—Adjusting screw, turned a few times, takes up slack in belts from normal wear and stretch. Belts can be changed in less than 30 seconds by releasing spring tension and placing new belt around sheaves.

**Description**—Special high grade steel springs are used, and unit is constructed throughout of steel. Installation is easy since motor is mounted directly on sliding plate



What  
THE  
PULLMAN  
CO.



## Accomplished by Modernization of DUST FILTERS by SLY

The Pullman Co.'s Calumet Shops modernized their Sly Dust Arrestor by replacing its old screens with new Sly flat cloth bags, and by installing a Sly automatic shaker control.

Efficiency and convenience were increased because: (1) The new cloth bags can be easily changed through a small door in the arrester. Formerly, replacement of torn screens meant almost complete dismantlement. (2) The new shaker control automatically gives the bags a thorough cleaning at regular intervals, thus insuring better cleaning.

Write Sly about your dust problem. Ask for booklet: "Guide to Dust Control."

THE W. W. SLY MANUFACTURING CO.

Branch Offices in Principal Cities

4754 TRAIN AVENUE

CLEVELAND, OHIO

When inquiring specify EP1623... see information request blank, pgs. 16-17

of base. Complete motor and base is then bolted down as a unit. In operation, when adjusting screw is given few turns, base moves back instantly to give correct belt tension. Spring tension holds motor, takes up slack, and cushions load shock that might otherwise damage motor and bearings.

IDEAL COMMUTATOR DRESSER CO., Dept. EP, 507 Park Ave., Sycamore, Illinois.

When inquiring specify EP1624... see information request blank, pgs. 16-17

## Eyeshield-Respirator

**Uses**—For use in dust conditions, splashing or flying particles.

**Features**—Clear, plastic eyeshield weighs  $\frac{1}{2}$  ounce, provides full, unobstructed vision. Easily removed for cleaning. Construction of eyeshield prevents shield from flapping, bending or twisting. Combination unit makes for increased efficiency.

**Description**—Eyeshield is arched over respirator and held in place by means of headband snaps. Fits snugly without pressure joints on face. Complete assembly is available in many of maker's models. Eyeshields may be obtained separately for affixing to many of maker's models now in use.

PULMOSAN SAFETY EQUIPMENT CORP., Dept. EP, Johnson & Prince Sts., Brooklyn, N. Y.

When inquiring specify EP1625... see information request blank, pgs. 16-17





## It's 10 to 1

### Signode "Bulkbinding" Will Cut Your Loading Costs and Damage Hazards



This modern, engineered method of bracing carload shipments for safer, more economical and convenient handling has a wide variety of practical application for oil, paint, chemical, as a matter of fact, all processes. The Signode System is being applied in over 300 different industries—and in every case paid dividends.

Signode Tensional Steel Strapping secures the load in the desired position, eliminates the need for heavy bulk loading, that costs more to install, increases the damage you pay for . . . permits absorption to transit shocks without damage.

Let us send a Signode representative to check the possibilities of Signode "Bulkbinding" for your carload shipments. It's 10 to 1 he'll be able to show you the way to substantial savings on material and labor . . . and the possible advantages of reduced freight charges and damage claims. Write us, stating the products you ship.

## SIGNODE STEEL STRAPPING COMPANY

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 10 Furman Street, Brooklyn 455 Bryant St., San Francisco  
 41 OFFICES THROUGHOUT UNITED STATES AND CANADA  
 When inquiring specify EP1626 . . . see information request blank, pgs. 16-17

## Floors of Solid Wearing Surface

### Smooth and Harden with Use . . . .



★ The Ductility of the Dura-Tred gum compound causes Dura-Tred to smooth out as opposed to the break and wear of friable crystalline material like cement. Dura-Tred is tough enough to carry any wheel load up to the strength of the sub-floor. Moving heavy loads will not mark or damage the body or feather edge.

## Highly Resistant to Mineral Acids!

Wherever dipping, pickling, plating and etching is done—wherever nitric, sulphuric, muriatic, chromic and other acids are used—Dura-Tred is highly resistant.

### For Patching—Repairing—Overall Resurfacing

#### Apply over Masonry Inside or Out

Dura-Tred is a self-smoothing resurfacer. Is used for aisle covering, patching, repairing or overall resurfacing. Can be kept in first class condition for the life of the structure.

Dura-Tred is completely factory-mixed—nothing else to add. Apply directly from the container on floors subject to extreme acid or wearing conditions inside or outdoors.

DIRECTIONS: DUMP—STIR—SPREAD

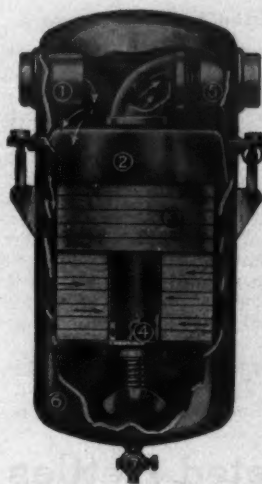
Get Full Details—Descriptive Circulars—No Obligation!

**DURA-TRED COMPANY**  
 3510 Carroll Ave., Chicago, Ill.  
 Opportunities for Responsible Representatives.

When inquiring specify EP1627 . . . see information request blank, pgs. 16-17

## Air Filter

Delivers Oil-Free Air for Control Systems.



**Uses**—Primarily designed for protection of instrument control system, later adapted for use on combustion control system of electric power unit. Express purpose is complete removal of slightest traces of oil from compressed air lines. Effectively prevents passage of moisture as well as dust, dirt, pipe scale or other foreign matter commonly found in pipe lines for air supply.

**Features**—Series of discs (see No. 3 in illustration) possess large absorption area plus high filtering efficiency. Lower portion of filter shell is easily removed for inspection or cleaning by loosening nuts on swing bolts, No. 8.

**Description**—Felt-like discs (3) are carried on a tube

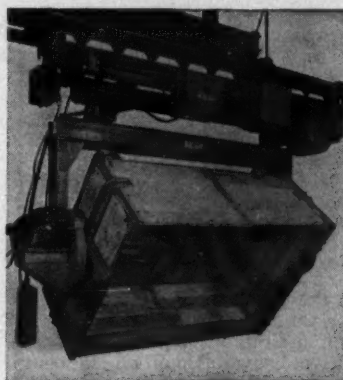
composed of inner liner of perforated metal covered with fine bronze wire mesh screen. This tube (4) helps drain oil removed from air to bottom of filter shell (6). Deflector cup (2) precipitates most oil and other foreign matter to sides of shell by centrifugal force. (1) is intake pipe, (5) is outlet and drain cock is (7). Direction of air travel is indicated by arrows. Wide range of pipe sizes and filter capacities is available, ranging from 3/4" pipe size for filter of 5 CFM capacity to 2" pipe for filter of 100 CFM.

**STAYNEW FILTER CORP., Dept. EP, 25 Leighton Avenue, Rochester, N. Y.**

When inquiring specify EP1628 . . . see information request blank, pgs. 16-17

## Full-Rotation Box Grab and Tramrail Carrier

Gear Motor Drive Turns Boxes to Any Position.



**Uses**—For transporting boxes of materials from storage to mixing machines, for turning or rolling over heavy crates of machinery, etc.

**Features**—Partial or complete turn of boxes may be made. Twin hoisting unit permits raising or lowering boxes as desired. Grab effective where gradual dumping of box is required.

**Description**—Unit illustrated is for boxes size 48" wide, 72" long and 30" deep, and will carry 2000 lbs. of materials. Steel and wood boxes are handled. Full load hoisting speed of 20 ft. per minute and travel speed of 150 ft. per min. Push-button station used for all operations, including turning. Boxes are securely clamped in position by means of hand-wheel located at end opposite gear motor rotating mechanism. Grabs can be furnished for smaller or larger boxes and for loads up to 5 tons (including box, grab and material).

**CLEVELAND CRANE & ENGINEERING CO., Dept. EP, Wickliffe, Ohio.**

When inquiring specify EP1629 . . . see information request blank, pgs. 16-17

## Automatic-IZE Your MATERIALS HANDLING

### Send us your "UNSOLVABLE" Handling Problems

From doing difficult—different—"impossible" jobs of transporting—stacking—storing, raw semi-finished—finished materials in all industries from breweries—rubber—explosives—to food and chemicals.

. . . our engineers, backed by over 30 years' experience can solve your "unsolvable" problems. The result will save space—save money—save time and break the bottle neck in your production line that's costing you plenty.

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 FORK TRUCKS RAM TRUCKS  
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## AUTOMATIC TRANSPORTATION CO.

Div. of Y. & T. Mfg. Co.  
 119 W. 87th St. Chicago, Ill.



When inquiring specify EP1630 . . . see information request blank, pgs. 16-17

## IF IT'S IN AIR OR GAS PEABODY Triple Action Scrubbers

will take it out.



### CLEANS:

Exhaust air & gases  
Lime kiln gas  
Producer gas  
Air from asphalt  
vats  
Coke oven gas  
Flue gas  
Annealing furnace  
atmosphere  
Removes microbes  
from air

Suspended particles are positively and permanently removed from gas or air by the exclusive Peabody principle of Directed Impact. All particles are shot directly at wetted baffle surfaces only a fraction of an inch away from the projecting orifice. They can't miss the target at point blank range and when they hit they are trapped.

Let Peabody solve your gas cleaning problems involving suspended matter in a gas stream. Dust, tar, lamp black, fly ash, asphalt fog, microbes or any substance not in a gaseous state at normal temperatures all respond to treatment in the Peabody Triple Action Scrubber.

Tell us your problem and send for literature.

**PEABODY ENGINEERING CORPORATION**

1 WEST 47TH ST., NEW YORK, N. Y.

When inquiring specify EP1631... see information request blank, pgs. 16-17

## Announcing A NEW 30,000 HOUR DODGE-TIMKEN BEARING . . .



This is more than the announcement of a new bearing. It is really the announcement of a complete line of Dodge Rolling Bearings offering complete coverage of industrial bearing requirements and each designed to give 30,000 hours of trouble-free service . . . The Dodge-Timken Double Interlock Pillow Block is rugged — easy to install — hermetically sealed and designed to give 30,000 hours service under conditions for which it is adapted . . . There is a size and type for every job — many of them are carried in local distributor stocks for immediate delivery.

**DODGE MANUFACTURING CORPORATION**  
Mishawaka, Indiana, U. S. A.

**DODGE**  
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**Real Help For You**  
This NEW Bulletin A-325 takes the guesswork out of bearing selection — send for copy today.



When inquiring specify EP1632... see information request blank, pgs. 16-17

## High Boiling Coal-Tar Solvents

### 2-50-W Hi-Flash Naphtha Solvent Power

**Uses**—Suggested in wire enamel, inks, synthetic enamels, slow evaporating coatings, and wherever powerful, mild odored, slow evaporating solvents are required.

**Features**—Do not contain any naphthalene or tar acids. Have high solvent power, high boiling range and high flash point. Available in boiling ranges heretofore unobtainable.

**Description**—Known as "Cosol" No. 1, No. 2 and No. 3, these solvents are slow evaporating, have high gravity, exceptionally low distillation residue; are practically water-white and have a mild, pleasant odor. All three grades are priced, varying from 27c a gallon in tank car lots to 32c a gallon, less cartons, in 55-gal. returnable drums. Specification sheet with characteristic tests available upon request.

**THE NEVILLE CO., Dept. EP, Neville Island, Pittsburgh, Pa.**

When inquiring specify EP1633... see information request blank, pgs. 16-17

## Steam Jacketed Kettles

### More Rapid Heating—Easier to Clean

**Description**—Built in full range of stainless steels, nickels, etc. Jackets are built to withstand 60, 100 and 125 lbs. per square inch. Kettles are available in tilting or non-tilting design, are built in true hemispherical shape for maximum strength and convenience in cleaning. No jacket stuffing box is used. Roll type flange of kettles is reinforced by rolled-in-wire band. All steams are welded, ground smooth and polished. Rated capacity gallons for standard ¾ jacketed kettles are in nine sizes, varying from 30 to 300 gallons. Steam enters through inlet nozzle, and safety valve, set for maximum working pressure, is standard. One piece lift-off or two piece hinged covers are obtainable.



**Agitators**—Available is the new single motion agitator with scrapers and baffles, thus producing equivalent mixing action of double motion agitator. Agitator, powered by geared head motor drive, is available on all stationary kettles in full range of sizes. Baffles and scrapers are optional. By adjusting baffles in various positions, currents can be established ranging from violent to smooth action. No vortex is created, hence air incorporation is reduced to minimum.

**Flush Valves**—Special nickel alloy flush valves with remote control are available in standard 1½" and 2" I.P.S. inside thread — larger on special order. Valve permits free flow of product and is easy to keep clean because of sanitary design. May be installed in field at any time on Pfaudler kettles only. Bulletin K-1 gives complete specifications.

**PFAUDLER CO., Dept. EP, East Ave. and Barnes St., Rochester, N. Y.**

When inquiring specify EP1634... see information request blank, pgs. 16-17

A complete line of  
volumetric and  
gravimetric propor-  
tioners for solid  
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## DURABLE, MOISTURE-PROOF REPAIR for BROKEN CONCRETE

You can do a perfect, permanent job of repairing broken and deteriorated concrete under damp or wet conditions—with FLEXITITE. This material bonds securely to old concrete . . . and resists water penetration. Where ordinary concrete on walls, ceilings, beams and support pillars fails to stand up due to the corrosive, crumbling action of moisture, FLEXITITE is the one practical answer to the problem. Used also for stopping leaks in concrete under hydrostatic pressure — for waterproofing concrete slabs—for plaster-and water-proofing.

Valuable, 68-page "HANDBOOK of BUILDING MAINTENANCE" sent to those requesting on business letterhead.

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When inquiring specify EP1636... see information request blank, pgs. 16-17